

THE DEVELOPMENT OF THE CONCEPT OF INDIVIDUALITY
AND ITS APPLICATION IN EDUCATIONAL PSYCHOLOGY

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. SUMMARY AND METHOD OF STUDY

SUMMARY:

The concept of individuality emerged in a rudimentary form in pre-historic times but it was not until Ancient Greece that it was generally recognized. By Roman times the idea of individual differences in learning capacity was understood and Quintilian suggested methods by which education could be adapted to these differences. The value placed upon the individual soul by Christianity gave added depth to the concept but the practical application of it dwindled during the Middle Ages. With the Renaissance, the re-discovery of the Ancients, particularly Quintilian, created a new awareness of man's individual worth and this stimulated both new enquiry into the meaning and nature of individuality and a new spirit in education. From this time on, the optimum development of the individual became an important aim of education and the understanding of the nature of the individual, a prime purpose in psychology. In educational reformers such as Froebel and Montessori and in psychologists such as Herbart and Galton, these two influences began to come together. The early days of the Twentieth Century saw a general preoccupation with the psychology of individual differences and its application to education. The introduction of general education, however, created new problems. At the present day,

the basic question of how to reconcile the needs of the individual to large-scale education has still not been answered. Taking Tasmania as an example, it is demonstrated that the realization of the need for individualized education on the one hand and its implication in the classroom on the other, do not co-incide. Some recent publications have indicated just how urgently society needs such a system of education, while others have suggested that, with new methods and new materials, an individualized system of education is entirely practicable.

METHOD OF STUDY:

The Study is in two parts:

Part A historical survey

Part B contemporary evaluation

PART A: seeks to trace the ideas of human individuality and human variability as they have appeared in philosophical, psychological and educational writings since records began, and the extent to which these ideas have affected educational thought during these times. In other words it will survey the history of that section of educational psychology which deals with the pupil as an individual, the ways in which he differs from other pupils and methods which have been evolved to cater for these differences. These topics make up a considerable section of modern educational psychology.

This scope is an extensive one but one which was

considered necessary because of the dearth of published material on this subject. No history of educational psychology in any detail, exists at the present moment. Burt (1957) has published a short monograph on "The Impact of Psychology on Education", a summary of the history of educational psychology by Watson (1961, pp. 209-242) provides an admirable survey. Otherwise it is necessary to go to histories of general psychology. Boring (1929) gives a short account of educational psychology in his wider discussion of functional psychology. Flugel (1935) has one chapter on "Psychology and Education" and Murphy (1949) has a chapter on the measurement of intelligence and another on child psychology. Brett (1953) has several sections labelled "educational" in which he considers psychology as applied to education and a section entitled "child psychology and intelligence tests". All of these histories, of course, deal in some detail with such individuals as Herbart, Galton and James, who have contributed extensively to educational psychology. Histories of education provide the most systematic account of educational psychology but they are more concerned with the educational than the psychological implications. This lack of adequate commentary on the wider aspects of the study made it difficult to restrict the study to any one period for, at no time, was it possible to quote the antecedents confidently knowing that this period had been

adequately studied previously.

In the circumstances it was considered better to survey the whole field. A chronological survey is given at first to give the historical perspective and then each aspect, philosophical, psychological and educational is taken separately. Again the approach is largely chronological since, in this way, the progression of ideas is more easily seen but schools of thought, trends in attitude and methods of approach have been grouped together.

This will be the plan of the first part of the study:

1. to make an historical survey of the concept of individuality as expressed by philosophers, psychologists and educationists,

2. to give a more detailed analysis of the development of the philosophical, psychological and educational aspects of the concept up to the present day.

In a study of such wide scope it has been necessary to rely heavily upon commentaries. Chief among these is Brett's History of Psychology (1953). Other important books of reference which were used are:-

Ulich (1950), History of Educational Thought

Quick (1907), Essays on Educational Reformers

Barnard (1862), English Pedagogy

Zillboorg and Henry (1941), History of Medical Psychology

de Wulf (1952), History of Mediaeval Philosophy

These authorities have provided important leads to original writings and have influenced the study in selection rather than interpretation. It has been necessary to rely upon translations wherever they have been available and to treat in a cursory manner some writers whose work was not available in English. Examples of these are Mapheus Vegius, Cabanis and Malebranche. The relevant portions of the Latin edition of Vegius and the French editions of the others were read and translations made of some important sections. With other writers, Thomas Aquinas, for example, and Rene Descartes, the very extent of their works has made difficulty. To do justice to their treatment of the concept of individuality would demand, for each of them, separate studies. In such instances commentators have indicated where to look and interpretations have been made after reading these works or sections of works.

PART B estimates the current concern with individuality and the extent of its application in modern education. The field of study is the English-speaking world in general, and Tasmania in particular. The size and relative isolation of the state of Tasmania render it a particularly useful field since it is a complete community, rural and urban, which is small enough and compact enough to survey as a whole.

The method consists of:

1. The analysis of a questionnaire circulated to all schools in Tasmania and the interpretation of this in the light of personal experience in these schools.
2. A survey of current literature to observe what trends are being followed and what emphases are being made.

CHAPTER I

INTRODUCTION

One of the important aims or principles of education generally recognized today is that of individuality. In 1961 Sir Robert Menzies, Prime Minister of Australia, in an address to the Second Annual Conference of the Australian College of Education, made the following statement: "Whatever brand of politics the student may some day profess, or reject or ignore, the educator must look at him, not as an economic unit some day to be recorded by a statistician but as an individual. For the better the individual, the more conscious will he be of his responsibilities to his neighbour and to society." (Menzies, 1961, p.5).

In suggesting that education should be concerned with the individual, Mr. Menzies is not alone. In "The Foundations of Education" published in 1962, a group of Australian educators discuss the purpose of education. They make a general statement of this aim which, they say: "may be best expressed in three parts as it has reference to the individual, to culture, and to society." (Connell et al, 1962, p.104).

Their full statement of the individual aspect of the aim is:

"Education should be designed so as to provide for each individual the kinds of experiences through

which he can achieve the measure of control over his environment of which he is capable, can determine for himself his own objectives in life, and can express himself as adequately as his own resources and those of his community will allow." (Connell et al, 1962, p.104).

This statement indicates a concern that education should be sufficiently flexible to provide each child with the conditions best suited for his individual needs. This calls for an understanding both of the ways in which the child is different from his fellows and also of the ways in which his teachers can allow for these differences and provide the optimum conditions for his learning. It is this that Radford means when he says:

"The proper handling of the individual differences between children still remains the most challenging problem in education." (Radford, 1961, p.3).

These three sources give some indication that in Australia today there is an awareness of the place of the individual in education. There is further evidence from the activities of research institutes, education departments and educational associations. At present such investigations are proceeding as "The Provision for Individual Differences in the Primary School" (Australian Council for Educational Research, 1962), "Education of Retarded Children" (Australian College of Education, 1963).

This current awareness is not restricted to Australia nor is it restricted to Education. In Sociology there have been many recent studies of the place of the individual in society (Whyte, 1960, La Piere, 1960) and there is a whole branch of psychology concerned with describing and measuring individual differences. Modern Educational Psychology is becoming more and more concerned with the particular rather than the general.

A study of recent educational and psychological publications will emphasize the relevance of the topic. The purpose of this study is to trace the concept of individuality from its emergence in Western thought to the present day, indicating in what ways it has been applied to education.

First let us consider the term more closely. Individuality is defined as "that which differentiates one organism from all others, whether it be the organized sum total of its qualities or its particular qualities or traits." (English and English, 1958, p.258). Drever says that the term is necessarily "purely descriptive" implying no dynamic or normative implications in the way that personality does (Drever, 1952, p.132), while the term has also been distinguished from individual differences in that it is said to be better to reserve the term individuality for "the organized personality which is

reached by a process of development, in so far as the given person owns systematic tendencies to react to his environment in ways different from other persons... the capacity to make a specific contribution in a given situation." (Robinson, 1921, p.861).

So we have the term used both as a descriptive term covering the differences between members of the species and as the end product of the process of development, implying value in that the person can make "a specific contribution in a given situation". In fact the concept of individuality does cover both ideas. In the first place it is a term covering the nature and the extent of human variations occurring at any stage in the development of the individual. In the second place it means the end product which has been achieved both by development and by the process of acculturation.

It is important to distinguish these two main uses of the term "individuality" since, throughout history, it has been used to mean either the starting point of education (the individual nature of each pupil) or the goal of education (for example Herbart's character of "many-sided interest"). It is possible for men to ignore, or to be unaware of, the extent of individual differences. This has been a common attitude of many cultures and their dependent education systems. It is also possible to

recognize the range of human variability, to see it as a danger to society or merely as a nuisance to education and to aim to reduce that range. Many educational practices were, and still are, designed to that very end. It is also possible to see education and individuality as necessarily incompatible. If the purpose of education is to teach children the mores of society so that they may be able to conform to it then, the more successful the education, the smaller will be the range of differences. This conflict between education and individuality has concerned thinkers throughout history, as Monroe states:

"The problem of the individual and of society... has been the educational problem as it has been the ethical problem, from the beginning of human life. How is the individual to be educated so as to secure the full development of personality and at the same time preserve the stability of institutional life and assist in the evolution to a higher state." (Monroe, 1905, p.754).

So any study of individuality will have to reflect the variations which have occurred in the value placed upon the child as an individual rather than as a member of society and the way in which individuality, when valued, has been made compatible with education.

The study will begin with the emergence of the concept from primitive thought and will end with its consideration in present-day educational psychology.

CHAPTER II

THE EMERGENCE OF THE CONCEPT OF INDIVIDUALITY

Individuality appears to have emerged with civilisation. In primitive society there is little evidence of individuality as we understand it. Tribal organizations, living close to nature, emphasize man in contrast with the world around him rather than man in contrast with other men. This appears as a relationship between man and the phenomenal world which imbues everything with life. Men, animals and plants all equally have life; so, too, have the sun, the wind and the rain and even the soil and the rocks. This animism is viewed by Frankfort in this way:

"Thought does not operate autonomously. The whole man confronts a living 'Thou' in nature; and the whole man - emotional and imaginative as well as intellectual - gives expression to the experience. All experience of 'Thou' is highly individual and early man does, in fact, view happenings as individual events." (Frankfort et al., 1949, pp.14, 15).

In such a world, where the inanimate does not exist, human differences are small and unimportant, differences exist between classes of objects rather than

between individuals within each class. The aim of education, in such a society, is conservative, aiming to preserve the fund of social experience.

"Group survival was not only the group aim but the individual aim as well. Indeed the individual had no aims of education distinct from those of the group. Individual variation in educational aims was not tolerated." (Brubacher, 1947, pp.1,2).

Primitive Education

Modern anthropological research has emphasized the importance of the group in primitive society and has described the manner in which all the socializing agencies of the society reinforce the group character. Aimed at the preservation of existing forms of society, primitive education is essentially conservative and produces a static society. An example of this is the Tehambuli tribe of New Guinea which, by clinging to the sex roles demanded by a cannibal society appear to have reversed the masculine and feminine roles. In their society, as reported by Mead, the women manage the household and the tribal business and the men stay home and adorn themselves for the cannibal forays they are no longer allowed to make. (Mead, 1950, pp.424-25).

Primitive education is informal in character since there are few, if any, specialists. It takes place

through the child's observation, through direct instruction of his parents, through the direct instruction of the elders and through such institutions as puberty rites and dancing. Pre-historic society, like modern primitive cultures, was informal in character. Only where certain societies were capable of producing an economic surplus could education move into the formal stage. Then the surplus released a minority of the people who did not need to take part in primary production. With this minority, formal education came into being in order to satisfy the demand for measurement and recording necessary for the administration of the surplus.

"The beginnings of writing and of mathematics and the standardization of weights and measures, coincide in time with the revolution. The synchronism is not accidental. The practical needs of the new economy had, in fact, evoked the innovation." (Childe, 1937).

Individuality in Ancient Egypt

Once specialization began, as it did in societies with an economic surplus, awareness of individuality could begin for them; different social functions revealed different human capabilities. In some early civilizations individuality appears to have received much more recognition than in others. The Middle Kingdom in Egypt is an example of such a society. There "individual man

had been the valued unit. First his individual abilities had been marked out for value, then his individual rights had been recognized." (Frankfort et al, 1949, pp.120, 121). This seems to have come about when the feudal anarchy which concluded the Old Kingdom was succeeded by the order and prosperity of the Twelfth Dynasty. Within these favourable conditions social change began again. It seems that it is at such times that human progress is made. The older order breaks up and is succeeded by confusion. Then stability is re-established but the impetus of social change carries the society on to new discoveries. In the Middle Kingdom religion became, for a time, an ethical matter, conscience was born and with it personal responsibility. This emphasis on individuality did not last. Slowly a complete change in attitude of mind took place so that, during the period of the Empire, the stress was being laid on the group interest and the individual was expected to submerge himself completely in the group character. Revolutions of this kind have occurred frequently in the history of the concept.

Individuality in early civilizations

Other early civilizations which grew out of primitive society were just as conservative, and anti-individualistic and appear to have stayed that way. China,

bound by the great weight of her customs and ceremonies has emphasized the social aim. India, "the world's psychologist," to quote Huston Smith, was interested in the nature of existence. It was sought to absorb the individual spirit in nirvana, a state of selflessness flowing from "the universal world spirit". There was no regard for such Western aims as "patriotism, economic prosperity, and social progress or for the individual aims of ambition, personal responsibility and self-reliance." (Smith, 1961).

In Islam, to give a later example, local societies and national groups were subordinated to the religious aims of the society and the individual was subordinated to the aim of equality in education. This latter aim arose from the fundamental religious tenet that all Muslims are equal and brothers.

"The importance of the Muslim community is so emphasized that it occupies a place prior to that of the individual whose freedom has been restricted and whose duties and obligations have been made subordinate to it - in theory at least." (Saliba and Tomeh, 1957, p.68).

Hebrew education must be mentioned because of its early tradition of popular education. In AD 64 Rabbi Joshua ben Gamala made education for all boys compulsory. This step, we should imagine, would cause problems of individual differences to arise. Any differentiation of

instruction was prevented by the attitude of the Jews towards religious matters. After the law was written and the canon determined it was deemed sacred and no variation was allowed.

"Every word of God is tried. He is a shield unto them that trust in Him. Add thou not unto His words. Lest He reprove thee and thou be found a liar." (Proverbs 30, 5, 6, R.V.).

The job of the teacher was to stamp the scripture upon the memory of the pupil. The job of the pupil was to remember all that he was taught and to recall it verbatim. Even so, differences in learning were observed and classified in the following way:

- "1. A sponge that absorbs anything.
2. A funnel that takes it all in at one end, and lets it all out at the other end.
3. A sieve that lets the wine pass through but keeps the lees.
4. A winnow that removes the coarse meal but retains the fine." (Eby and Arrowood, 1940, pp.151, 152).

A study of any of these societies would indicate the part played by the concept of individuality in their education but since they all, to a greater or lesser extent remained static, it is more profitable to turn to the Greeks.

Ancient Greece and Western Individuality

It is when we look at Ancient Greece that we see the first real expression of individuality. Unlike the Egyptians the Greeks were interested in the world of ideas, in the relationship between the general and the particular. This caused them to look at themselves and their society and to attempt an analysis of both. We can find in the words of the Greek philosophers the development of their thinking along these lines. First, however, we should examine the factors that made the Greeks so particularly concerned with the nature of the individual.

There is, first, the geographical nature of their homeland. Isolated into city-states and yet joined by the sea to a larger community, the Greeks were forced to develop on independent lines. The religion of the Greeks, universal but non-institutional, was both a reflection of their individuality and an incentive to it. The breakdown of their theology made Greeks think for themselves, made individual man "the measure of all things". Certain characteristics of the Greeks as a race have been observed by historians, characteristics such as initiative and spontaneity, self-interest, competitiveness and intellectualism. These characteristics were emphasized by their social institutions, by the Athenian family education, the competitive physical games and the local religious cults. On the other hand characteristics have been noted which show how the Greeks could form anti-individualistic

institutions, such as Sparta. These include the liking for discipline and regimentation exemplified by the Spartans but not absent even in the Athenians.

Greek life was dominated by "logos" or proportion. This proportion could be observed in three aspects. The first was the relationship between the different parts of the individual, the second between the individual and his fellow citizens and the third between humanity and the whole universe. The desire to explain this harmony, to show how the different parts fitted into the whole, led to philosophic speculation. The Ionians, searching for an explanation of existence attempted to explain all things on the basis of one principle. Thales began a line of speculation which chose water, Anixamander, the "Boundless", Aniximenes, "air" and Heractilus, "fire", as that ultimate principle. While none of their explanations was satisfactory, the speculation led them, among other things to consider individual experiences distinct from total experience.

"The existence of the individual is that of part within a whole; and as the elements in the whole are better and worse, so the individual is better or worse according as he has more or less of the better elements." (Brett, 1953, p.37).

Heraclitus has been credited as "Probably the very

first who called attention to the individual as such and who implied the need of thorough individualization in psychology." (Zillborg and Henry, 1941, p.39).

Parmenides was a dualist, assuming two primary matters and denying the reality of the external world. Thus he made a beginning to metaphysics. He stated that there exists something which is eternal and immutable, the denial of which makes knowledge impossible. The world of change cannot be the object of true knowledge because thinking is not concerned with the senses. While the Way of Truth denies the external world the Way of Seeming describes its apparent characteristics. The nature of man is composed of the two primary qualities and differences in nature result from unequal mixtures of these. Parmenides "referred the differences of sex in the embryo to its local position, so that the contrast of male and female corresponds with that of right and left... He followed Alcmaeon in using the hypothetical proportions of the male and female generative elements to account for idiosyncracies of character and, above all, for the peculiar sexual inclinations of the male and female products. In precisely the same way he referred the intellectual differences of individuals and their mental condition with its temporary variation to the greater or smaller share of the two primary matters which their bodies contained." (Gomperz, 1939, p.182).

Empedocles of Sicily followed an eclectic approach and postulated four elements, water, air, fire and earth as composing and preserving the world. The phenomenal sensible qualities of a compound depend on the manner in which it is composed and he compared the endless variety of nature, made up of different quantities of the four elements to the way artists make up colours from the four primary colours. He applied this reasoning to qualitative differences in the human body:

"Thus flesh and blood were supposed to contain equal parts of the four elements - equal in weight and not in volume - whereas the bones were composed of one half Fire to one quarter Earth to one quarter Water." (Gomperz, 1939, p.233).

By applying the principle of proportional combination, he was able to explain infinite variations between individuals.

"As they mixed, there poured forth countless races of mortals, equipped with forms of every sort of marvel to behold." (Freeman, 1948, p.57).

"Thus Empedocles laid the foundations for the important notion of temperaments or the idea that an individual's characteristics depend upon the mixture of elements in the body." (Brett, 1953, p.39).

In the Hippocratic Collection we find a further

development along medical lines of this idea of mixture of elements. Man is considered to be the proper study of the doctor and the treatment is determined by the actual patient and not by an abstract idea of man. So Hippocrates and his followers studied individual differences by the method of observation, first of actual individuals and secondly of environmental factors.

"The essential life-process was the interplay between the individual and environment." (Smith, 1930, p.104).

All animals are formed of fire and water, earth and air. Nothing is born and nothing dies so that there is a perpetual and eternal revolution of things, making change the only reality. Man's nature parallels universal nature and man's capabilities reflect bodily functions. On the proportion of fire and water in the body all depends - sex, temper, temperament, intellect.

More detail is given about the chemical basis of temperament which is said to be brought about by the interaction of four qualities, hot, cold, moist and dry and the humours. They are liquids of the body, blood, phlegm, black bile and yellow bile which seem to have had their derivation in Egyptian medicine. Blood is formed from the combination of hot and moist, phlegm from the combination of cold and moist, yellow bile from hot and dry and black bile from cold and dry. Characteristics of temperament are due either to the mixture of elements or to the condition of the pores through which the soul passes.

Diet and climate affect the humours, so that individuals who have grown up in a country with extremes of climate become wild of manner and Asiatics through their environment become cowardly. (Smith, 1930, p.105).

"In Hippocrates in fact we find the first close statement of the theory of humours which, with additions from Galen was still underlying Elizabethan thought 2,000 years later." (Reeves, 1958, p.33).

The Sophists

The Persian Wars led to social changes in Greece. The power of the aristocracy declined since many of the land-owners were impoverished and the growing commercial class had to be allowed some part in the government. This meant that the first steps towards democracy had been taken. These steps were unpopular, as reference to the comedies of Aristophanes will make clear, since they were accompanied by many changes in the social order. Products of this movement and yet, at the same time, contributors to it, were the Sophists.

Gomperz describes them as "Half-professor and half-journalist - that is the best formula that we can devise to characterise the Sophists of the Fifth century B.C." (Gomperz, 1939, p.414).

These professional teachers were the first in Greece, perhaps in the world, to be paid for their services

and this is one of the reasons why they were so greatly criticized by their contemporaries. They were also accused of corrupting youth by teaching them to question everything and later commentators have considered that they pandered "to some of the most selfish and individualistic tendencies of democracy." (Davidson, 1904, p.101). Others consider that they were just interpreting the mood of their time. In the early stages of Greek life, as in all early societies, life rested upon religious consciousness which was the expression of the solidarity of the group. The simple nature religions and ancestor worship of early man were replaced by a pantheon of ideal personalities. Here the Greek imagination was given full play so that their gods became involved in every sort of intrigue and adventure. Eventually Greek religion became involved in a contradiction for, while it still had ethical significance, the deities themselves did not conform to these standards of ethics. That this contradiction did worry Greek citizens can be demonstrated by reference to Lucian.

"While I was a boy, when I read in Homer and Hesiod about wars and quarrels, not only of demigods but of the gods themselves, and about their amours and assaults and abductions and law-suits and banishing of fathers and marrying of sisters I thought all these things were right and I felt an uncommon compulsion towards them. But when I came of age I found that the laws contradicted the poets

and forbade adultery, quarrelling and theft. So I plunged into great uncertainty, not knowing how to deal with my own case." (Chapman, 1931, p.25).

This uncertainty affected Greek citizens particularly at this time of social change. Some even tried to find the answer by introspection and, in this way, the disciplines of philosophy and psychology began. Since their thinking was individual their conclusions were based upon the individual man, "in a word, philosophy give rise to individualism." (Davidson, 1907, p.81).

Seen in this light, the break up of Greek, or at least Athenian society, into its constituent parts - individuals - can be seen as part of the development of the society itself and the Sophists can be seen as merely interpreting the current mood.

"The truth is they represented in practice and in theory, the spirit of individualism which was then everywhere asserting itself against the spirit of nationalism or polity and which perhaps had to assert itself in an exaggerated and destructive way, before the rightful claims of the two could be manifested and harmonized." (Davidson, 1904, p.101).

It was the first, and perhaps the greatest, of the early Sophists, Protagoras, who said that, "Man is the measure of all things, of that which is, that it is, and of that which is not that it is not." (Brett, 1953, p.59).

This expressed individualism in an extreme form and also expressed the new idea which had been developing through the speculation of the Ionians and the investigation of Hippocrates. For the first time individual man, rather than the family unit, the tribe or the nation, had moral responsibility. This resulted in a complete change of emphasis. Previously society was the centre of effort. The members of the society interpreted their purpose as the welfare of the whole. The Sophists caused the social organization to be considered as a means towards the individual good - the interests of the individual became more important than the interests of the State. From this it was but a single step to the assumption that pleasure was the aim of life.

"They held that the interest of the individual lies in controlling his actions in order to experience as many pleasant sensations as possible." (Eby and Arrowood, 1956, p.316).

They considered that, since traditional moral sanctions had been discredited the individual was the measure of right and wrong. What was right at one time or to one person was not necessarily right at another time or to another person. There was no absolute right or wrong. Similarly, individual perception is the only reality and there is no universal truth other than the perception of the

moment. Protagoras "was interested to declare that the higher knowledge must be, like sensation, a definite activity of a human kind. It is against the world of objects which man cannot know that he protests, they must be either knowable - that is capable of producing a real inner activity of the human mind - or be nothing at all." (Brett, 1963, p.59).

Athens was particularly vulnerable to the new ideas because of the informality of her education. The education of children was the responsibility of the parents and took place within the family. The education of adults was carried on in the market-place and gymnasium and was unorganized. The teaching of the Sophists was received with enthusiasm by the youth of Athens and was taken over so thoroughly that the whole basis of society was undermined. The former aim of education was "worth" - the worth to the society. This was replaced by "happiness" - the happiness of the individual. The Sophists were transferring responsibility from the society to the individuals. They were not absolving the individual from all responsibility but, popularly, that is what they seemed to be doing and it was this extreme of their teaching that Socrates set out to correct.

Socrates and Universal Man

Socrates was considered by his contemporaries to be a Sophist and it seems clear that he held firmly to

their belief in the importance of the individual. What was different was his interpretation of "individual". The Sophists considered that "man" of "man is the measure of all things" as "individual man" while Socrates interpreted it as "universal man".

"'It is true', said Socrates in effect, 'that the individual and not the State is the source of all authority, the measure of all things, but he is so, not as individual, but as endowed with the universal reason by which the world, including the State, is governed.'" (Davidson, 1904, p.109).

Like the Sophists, Socrates attached the assumption of knowledge without proof and the method of enquiry he evolved, still bears his name. Brett sees this as a mixed blessing since it introduced scientific method on the one hand and undue preoccupation with methodology on the other.

"At best people like Protagoras and Socrates prevent their more imaginative colleagues from talking nonsense; at worse they prevent them from talking at all." (Brett, 1953, p.57).

In ethical matters Socrates was concerned with rescuing society from the critical position reached by the Sophists. The old moral sanctions, social and religious, lost their efficacy before the rationalism and individualism

of the philosophers. This was exploited by many of the Sophists who suggested that expediency was the important principle and taught the young men how to assert themselves successfully against the laws of the state. To counteract this Socrates set out to show the universality of truth. The knowledge which had been demonstrated as differing from one individual to another was merely opinion. Somewhere if it could be found, was real knowledge which did not depend upon individual idiosyncrasy. Men think differently because they perceive imperfectly and their thought is imperfect. When these imperfections are removed the universal truth will be revealed.

The individual is seen as sharing in the common intelligence. This is a point of some metaphysical importance but, in making the link between the individual and the universal truth, Socrates appears to have arrested the development of the psychology of the individual. He sees man as striving after happiness. Happiness is found only in the good, and desire, the will to be happy, is really the will to be good. Given clear knowledge, man will always choose the good since this will lead to happiness. Why the psychologically desirable and the metaphysically desirable should be identified or why the will should always obey clear knowledge is not explained. It would seem that will is only another aspect of reason.

Reason is the highest faculty and is completely independent of passion since faculties cannot interact. Since this does not give an explanation of irrational actions, Socrates also postulates a "daemon". This could be identified as instinctual action but was seen by Socrates as part of the common intelligence. At this stage he appears to have come close to the idea of soul.

Socrates counteracted the tendency towards individualism by showing that the individual was finally responsible not to himself alone but to eternal, universal truths. While this completed the emancipation of the individual from his social group it imposed other limitations which were later to hinder the development of the concept of individuality. Psychologically as Brett says, "Socrates can be regarded as an appendage to the line of Sophists, as one who worked in their spirit with new aims and with purposes that tended to check the development of psychology." (Brett, 1953, p.60).

Educationally Socrates was responsible both for a technique and for a shift in aims. His method, the dialectic, was to influence teachers right down to the present day. The change in educational aims was from conformity to society through training and habit to reliance on individual rational morality. The successive changes in moral attitudes from the pre-Sophists to the

Sophists and from the Sophists to Socrates would represent a change equivalent to that from Piaget's transcendental morality, through his autonomous morality to his concept of rational morality. This progress was too fast for Greek Society to take. Socrates set high value on education since only knowledge brought happiness and education helped man to achieve knowledge. To him all men were potentially equal; education brought them closer to the common intelligence.

As a final assessment of Socrates' influence on the concept of individuality we might agree that he helped to transform anarchic individualism into something closer to our idea of individuality - that is he related individual men, to a higher principle. On the other hand he did a disservice to the psychology of individual differences by changing the direction of Greek thought from the relationship of man to his world to the relationship of man to himself. This meant that psychology was abandoned in favour of metaphysics.

"In place of the analysis of psychic life we have a dialectic of concepts." (Brett, 1953, p.61).

CHAPTER III

CHRONOLOGICAL SURVEY OF THE DEVELOPMENT OF THE CONCEPT

In the Fifth Century B.C. a few Greek thinkers had freed themselves sufficiently from the social world as to be able to view themselves as individuals, discrete personalities. They were unable to decide which came first, Society or the individuals who made up Society but, in exploring their new-found independence, their freedom from group standards, they threatened the very existence of the State. Socrates tried to establish an authority to which both the individual and Society were subject and he made this the authority of universal truth. His disciple Plato, (427-347 B.C.), interpreted this universal truth as reason and made reason the highest and most enduring aspect of the universe. Within each individual, reason is the highest element controlling the lower elements of spirit and appetite. The individual is a living cell in the organ of the State. The State itself has three parts corresponding to the three elements, reason, spirit and appetite. Each individual belongs to one of these parts according to the proportion in which the elements are present in this person. In this ingenious way Plato proposed both an explanation of the relationship of the individual to Society and an

explanation of individual differences. He suggested universal education leading to a selection process by which the different types of citizens were to be allocated to the position in society for which their nature suited them.

Aristotle (384 - 322 B.C), after studying 250 different societies, decided that the individual could only operate as an autonomous being within the structure of the state and he stated that 'the state is prior to the individual'. He saw individual differences as being the result of the action of reason and habituation on innate potentialities. For the first time moral differences were included with physical and mental. He formulated a concept of the norm and described individual differences in terms of deviations from this norm. Aristotle was to control the development of thought for the next sixteen hundred years; his ideas on individuality could have been the jumping-off point for a psychology of individual differences. Instead they were to remain, during this time, as the final word on the subject.

Metaphysical speculation dwindled after Aristotle. The break-down of the city states meant that political independence came to an end. Within the anonymity of larger political organizations, however, personal independence tended to increase and with it, the gap between the individual and society. Previously the individual had

"belonged"; since the philosophers he had neither citizenship nor religion to fall back on. He was left only with the sense of his own uniqueness. This gap was later to be filled by Christianity which was to supply the individual both with an explanation for his existence and a reason for continuing it. In the meantime oriental cults were turned to as possible answers and the Stoic and Epicurean systems were developed to supply this need. The Stoics laid emphasis on law and necessity. This meant to the early Stoics a determinism which approaches the fatalism of the East. The freedom of the individual was reduced to a mere acquiescence. Later Stoics placed more emphasis on the power of reason and their determinism was closer to Calvinist pre-destination. Universal brotherhood provided the *raison d'être* and heroic contempt and complete personal independence their duty in this life. The Epicureans, on the other hand, were materialists, atomists who resolved the question of general or specific by denying the validity of the general. The soul is a mere extension of the body a particular arrangement of atoms with the characteristics of fire. Differences in temperature explain differences in temperament. The irregular motion of atoms produces all behaviour and the individual is able to choose the path of moderation which is the aim of life.

Individualism in Rome

Lucretius (95-55 B.C.) expressed for the Romans the Epicurean philosophy and extended somewhat the explanation of the causes of individual differences. Mind and soul are made up of wind, heat and air. Innate differences in the proportion of these elements determine temperament. Such differences must be taken into consideration although, in the final analysis, the power of reason is supreme. Here we have the theory of temperaments again, virtually unchanged since Empedocles and Hippocrates.

Although no progress was made in the philosophical and psychological consideration of the concept in the four hundred years following Aristotle, one important contribution was made to its educational aspect. Quintilian (AD 35-95) emphasized the range of individual differences and suggested ways of measuring them and advocated an education which fostered the unique gifts of the pupil. Here was no attempt at creating a typology for "there is an unbelievable variety, and types of mind are no less numerous than types of body". (Quintilian 1938, p.101). Nor was there a readiness to suggest that these differences are purely hereditary for he places equal importance on experience. Quintilian's influence on education was profound since the rediscovery of his works in the fourteenth century was to shape the course of Renaissance education.

The last great figure of the ancient world to contribute to the concept of individuality was Galen (130-200 A.D.). He dominated medical theory and practice throughout the Middle Ages and his development of the theory of temperaments was to endure until the eighteenth century. He suggested that mental states depended on physical factors and that individual differences depended on differences in the mixture of humours. He postulated a standard temperamental type in which all the humours were balanced and then, along dimensions of hot and cold, moist and dry, a large number of other types which he described in detail. He considered the will as dependent on temperament and considered the evil soul as a diseased soul. He suggested that, while nature has the biggest part in determining temperament, nurture can alter it and all individuals retain "the fundamental power of welcoming the good" which saves us from determinism.

Christian concept of individuality

The death of Galen halted the systematic study of individual differences.

Awareness of individuality had arisen with the Greeks. Failure to understand how the individual fitted into the universal scheme or more practically how he fitted into society led men to Stoicism and Epicureanism. They were left unsatisfied, however, until Christianity took

over the Greek concept of individuality and re-interpreted it. The individual was seen again as part of a body, not of the political body but of the Body of Christ. Each part of this Body is different, each part has its own function but, what is important, is not how each part differs but what they hold in common - their equality in Christ. Here we have a strong emphasis on individual worth but a devaluation of individual differences. Everyone is different, said the Church, but this is not important, what is important is that everyone has an equal share in God, an immortal soul.

This attitude can be found in the writings of the early fathers, Clement (c160 - c215) and Origen (c184-c254). The question of free will emerges too, and Origen decided that all men were created equal. Individual differences appear through the exercise of free-will. In St. Gregory we find a description of teaching methods which lays stress on catering for the individual but, except for general admonitions, no clear way of doing this is suggested. The stress which was being placed upon equality before God led to the growing belief in equality of intellect. Differences to be observed in individual intellectual functioning are due to failure of will, and therefore, to sin.

This belief was to obscure the issue of individual differences and to give sanction to educational

methods which treated all pupils alike. St. Augustine (354-430) gave an exposition of the doctrine of grace, which, while not supporting this notion of equality of intellectual endowment, lent some justification to it. Everyone receives sufficient grace for salvation so that every individual, no matter how handicapped he appears to be, can be saved if he uses the opportunities offered to him by the Church. This was a direct contradiction of the Gnostic doctrine of individual salvation. The individual was damned through original sin. Grace in sufficient quantity was forthcoming from God to ensure salvation and this grace was channelled through the Church. This raises two issues; the first is pre-destination, since, if grace comes from God, then man's fate is in the mind of God, and the second is the essential evil of human nature, since man is damned without God's grace. Both these points of view were to influence the education of the individual for many centuries.

From Realism to Nominalism

During the Middle Ages these attitudes crystallized and the concept of individuality almost disappeared from view. Metaphysical speculation on the nature of individuality continued in the controversy between the different schools of realism. The exaggerated realists suggested that only the general, or the common

essence, existed. The individual is only a property of this common essence and individual differences are unimportant. This was the prevailing point of view and it successfully discouraged scientific observation. The opposing point of view emerged in the anticipatory humanist movement of the eleventh and twelfth centuries. Peter Abelard (1079-1142) represents this point of view. He has been called "a moderate realist".

He insisted on the autonomy of the individual, which would continue even if the individual were to lose all its accidents or individual characteristics. Interest during the Middle Ages remained focused on the metaphysical questions. The psychology of individual differences did not receive any consideration during this time and education was so circumscribed by dogma that an education of the individual was impossible. Towards the end of the Middle Ages, the emphasis on scholastic philosophy to the exclusion of all other avenues of thought increased. Speculation gave place to subtlety of terminology. Then appeared two thinkers who were great enough to rise out of the groove into which philosophy had fallen. Albertus Magnus (1193-1280) and Thomas Aquinas (1225-1274) marked both the culmination and the termination of mediaeval thought. A new synthesis of Aristotelian and Christian (Scholastic) philosophy was arrived at. The new philosophy

emphasized the supernatural and the universal rather than the natural and the individual. On the other hand Aquinas did bring the individual back into the scheme of things by making God the origin of individual differences. Variability is a result of differences in matter. In the individual it begins as physical difference and only later involves differences in soul. Difference in intellect depends fundamentally on difference in the sense of touch. Free will is dependent on reason, "A man has free choice to the extent that he is rational." (Aquinas, 1951, p.261) Thomism, as the new philosophy became known, had a tremendous influence both on Humanist thought in the fourteenth century and on Catholic thought and education to this very day.

Duns Scotus (1266-1308), the greatest of the critics of Aquinas, made will the most important faculty, presiding over reason. Individuality appeared to him to be a result of differences in the intensity of form and the individual, and not the general, is the ultimate reality. William of Ockham (1270-1369) carried this notion further still. The individual alone was real. All general concepts such as "the universe", were mental constructs and, as such, were unknowable. Here we have a return to a position similar to that of the Sophists and just as their doctrine of individualism helped to bring to an end

the Ancient World, so nominalism linked with the scepticism of Scotus and Ockham contributed to the ending of the Middle Ages.

The Renaissance and Humanism

The Renaissance brought with it a new awareness of the importance of the individual. The motivating power of the Renaissance was Humanism, a movement modelled on Ancient Greece and opposed to Scholasticism. It embraced all aspects of human learning, scientific as well as literary. Each early humanist, like Petrarch, Leonardo, Valla, Vives, More, Erasmus, was a 'l'uomo universale' an all-sided man. Their scientific interests tended to be practical rather than speculative and metaphysics, as a revulsion against Scholasticism, was undervalued. Their consideration of individuality, therefore, was mainly confined to the topics of free will, individual differences and the education of the individual.

In Italy, where the Renaissance began, educators like Vergerius (1369-1428) and Vittorino da Feltre (1378-1446) effectively applied humanist ideas, and in particular the ideas of Quintilian, to the learning situation. Schools were set up which emphasized the cultivation of individual talents. Efforts were made to study, not so much the nature of individual differences in general, but the nature of each individual in particular and to provide an education which suited that individual.

Erasmus (1469-1536) spread humanist ideas on education into Northern Europe. He emphasized that the individual nature of the child must be consulted in determining education, particularly that of the very young child. In consideration, perhaps, of the more firmly established educational systems of Northern Europe, he did not place as much emphasis as the Italians upon the development of well-rounded individuals. He was rather apologetic about dealing with education at all, "seeing that Quintilian had said in effect the last word on the matter." (Woodward, 1900, p.10), but his prestige was so great as to influence education throughout Europe.

In Italy Sadoletto (1477-1547) described the development of individuality and suggested two divisions of education, moral and literary. The duty of moral education was to moderate the undesirable characteristics of the individual, the duty of literary education to extend the desirable characteristics. This foreshadowed Herbart's thinking on individuality and began the modern Catholic tradition of education based on a blending of Thomism and humanism. Loyola (1491-1556), the founder of the Jesuit teaching order, made an early systemization of the new educational trends. Realizing that individual differences affected the efficiency of learning the Jesuits stressed an education which was organized to cater for differences in intellect and character. A division of

scholars into homogeneous classes was practised and teachers were urged to study the individual character of each boy. This system of education was to prove very efficient and was to persist with little change into the eighteenth century. It contains many features of modern education of the individual.

Elyot (1490-1546) wrote the first book on education in the English language. It described the methods to be used by a tutor and suggested knowledge of the pupil's characteristics as the first duty of the educator. Ascham (1515-1568) described school education and criticized harsh disciplinary methods as inappropriate in the light of individual differences. He suggested that the rôle of "paedagogus in manners" should be lifted from the schoolmaster so that he could employ gentleness in learning and take into account the child's temperament. Mulcaster (1531-1611) made an early approach to the concept of learning readiness. He advocated a concern for 'ripeness' in learning. This, he said comes at different ages in different children. His "Elementarie" was a system of education which was aimed at discovering "what soever gift nature has bestowed upon the body," (Mulcaster, 1907, p.95), and developing such a gift for proper use throughout the child's whole life. Wotton (1568-1639) established criteria for determining the "capacities" of children since affection, in parents, and charitableness, in teachers, cause these

capacities to be misjudged. His list includes physical, mental and emotional characteristics and may be taken as an early test of intelligence.

Rabelais (1483-1553) was a contemporary of Elyot and Sadoletto but appears to be an anachronism in the Renaissance setting. Instead of the elegant optimism of the time we have a bitter satire of education and a naturalistic approach which leads, via Montaigne, to Rousseau and Pestalozzi. He sees education as the developing of the individual's own thoughts by learning from life and, although his ideas may not have contributed to the immediate improvement of education, they had a tremendous effect upon its eventual direction. Montaigne (1533-1592) was a firm critic of humanism, particularly in education and advocated a move away from literary studies and a return to nature. Here he was saying in more precise terms what Rabelais had said in his satire and what Rousseau was going to raise to the status of an educational philosophy. Like Ockham, he recognized no essences, no universals, only individual events. The proper subject of study, therefore is variability and human variability in particular. He described the characteristics of exceptional men to show the range of individual differences and insisted that an education that did not take this range into account was useless. Natural inclination is

important but education can help and strengthen it and education must be through nature, that is according to the nature of the child and the nature of the world.

The most important contributions to the psychology of individual differences other than that of Montaigne which were made at this time were by the Spaniards, Vives (1492-1540) and Huarte (1530-1569). Vives has been described as the first educational psychologist and Huarte as the founder of differential psychology so that their impact on the history of psychology may be judged. Vives developed a psychology of character, based on physiology, with blood temperature as the main determinant. He described, in terms of intelligence and character, the kinds of pupils who were best fitted for different subjects, suggested psychological enquiries into children's memory and play in order to discover their capacity and also suggested conferences between teachers for the purpose of selecting the best course for pupils to follow. Huarte may be credited with first suggesting mental tests on a national scale for the purpose of determining what kind of an education was suitable for different children. He believed that temperament was based on the humours and that individual differences arose as a result of different conditions at conception.

Valla (1403-1457), early in the Renaissance, challenged the long-held concept of free will. He considered

that freedom of will and the doctrine of original sin were inconsistent. These arguments were developed by Luther (1483-1546) into a position close to pre-destination. The reforming priest had begun with a real concern for individuality which was to persist in what has been called, in recent times, the Protestant Ethic. In denying the doctrine of grace, however, he found himself driven back on to the doctrine of original sin and the logical conclusion, pre-destination. Erasmus, who had sympathised with Luther's initial issues, attacked this conclusion since it did not allow for the humanist optimism in the essential goodness of man. Calvin (1509-1564) took the doctrine of pre-destination to its extreme. There is no absolute free will; man is pre-destined for salvation or damnation. Believing this, the individual might be expected to relinquish all autonomy but Calvinism insisted that each man had to prove his election to the saved by good works. In striving to do this, a surprising measure of individual thought was retained. Montaigne came closer to a modern view of free will, he explained it in terms of subconscious factors influencing the making of choices. This is a direct anticipation of Leibniz's theory of apperception.

Naturalism, the Scientific Movement

In its early stages the Humanist movement extended over both scientific and literary studies. Gradually,

however, these two aspects of thought tended to separate into two camps. The literary movement retained the name humanism, the scientific, by its emphasis on nature, became known as naturalism. Bacon (1560-1626) gave the new movement its momentum and, in doing so, decided the future course of individual psychology. His chief importance is not in any original contribution to thought but in systematization of the scientific corpus. He chartered the route which science had taken so far and pointed out the direction in which it was to go. What is important to this study is that he included in his scheme the study of individual differences and emphasized the importance of educating the individual.

Hobbes (1586-1679), in his 'Leviathan' studied man in his relationship with society and was more impressed by the ways in which men resemble each other than the ways in which they differ. This he thought to be particularly the case with mental faculties. Comenius (1592-1670) developed Bacon's scientific approach into an educational system, combining it with his own pantheistic view of nature. He agreed with Hobbes on the matter of intellectual equality. All men are essentially equal, having the common faculties of knowing, willing and achieving. Where differences arise they are the result of sin. Through an education of the senses the divine nature is liberated from sin and "universal wisdom may be procured for every human being born".

(Comenius, 1938, p.8)

The question of equal intellectual endowment in all men began to become a crucial one and was to result in two different educational approaches. Descartes (1596-1650) came down heavily on the side of equal capacity for learning although he appeared to be undecided whether it was the "ideas" that are innate or the "faculty" of thinking. This would represent the difference between saying, with the Gestalt school, that perceptual processes are innate and suggesting, on the other hand, that all children are born with an equal capacity for learning. This viewpoint of Descartes, however, interpreted, placed great emphasis on the value of education as a process of drawing out and gave impetus to that tradition of education which favours the development of inner qualities.

Locke (1632-1704) helped to establish another tradition in education, one in which the imposing of mental discipline rather than the drawing out of innate qualities was stressed. Locke himself has often been accused of suggesting that children were blank at birth and that their final natures were entirely the result of their environment. This does not appear to be fair criticism. He placed great emphasis on individual differences, hereditary and otherwise, and felt that education could never be studied in a completely comprehensive way because of the extent of individual variation.

On the other hand education must aim at making the best of what nature has given and this can only be done by a study of the "natures and aptitudes" of children.

Locke was, in fact, an individualist in thought and an opponent of any doctrine which seemed to limit the individual's autonomy. One of these was the doctrine of innate ideas which had been inherited from Plato. Locke demonstrated the fallacy of this view and his opposition to it was equated by many, including Helvetius (1715-1771), with disbelief in the power of heredity. This means that Locke has been quoted, incorrectly, ever since as a strong environmentalist in the nature V. nurture controversy.

Hereditarian views became crucial once more in the educational systems set up by those religious sects, which subscribed to the doctrine of pre-destination. Puritan schools in England and the Port-Royal schools in France are examples of those. The importance of heredity in determining human nature, the essential weakness and corruption of this nature, the need for education to strengthen and develop it, the need for universal education since God's election can fall on anyone, the need for individual care and attention since election is not always self-evident, all are characteristics of pre-destination thinking on education. The influence generally was towards universal education in which concern for individual differences was coupled with the repression of unfavourable

characteristics rather than the development of favourable ones.

Empiricism and Idealism

With Locke began another approach to the question of free will which was to lead, via Associationism, to Behaviorism. The implication of Locke's thought was materialistic. In applying Bacon's inductive methods to psychology and refuting the notion of innate ideas he arrived at the conclusion that all knowledge comes from experience. The implication drawn from this by many was that the mind was material.

Berkeley (1684-1753) hastened to point out that the converse was true; matter only exists as a form of mind. Any "thing" exists only in respect to our sensations of it.

This reduction of existence to sensory experience was taken one step further by Hume (1711-1776) who demonstrated that "mind" itself is only an abstraction, a general term for a series of perceptions. These perceptions actually constitute the mind and man, himself, is only a collection of fluctuating perceptions.

Perceptions are organized into complex ideas by the process of association. One of these complex ideas is that of identity, including personal identity, the idea of self which, like every other idea, changes with perception. Behaviour, including moral behaviour is largely involuntary and, "As to free will, we have shown that it has no place

with regard to the actions, no more than the qualities of men". (Hume, 1911, II, p.302). Voltaire (1694-1778) carried the ideas of the English empiricists to France and although he contributed little that was original to these ideas, he led to the continuation of this line of thought in France. Condillac, Cabanis and Bonnet represent the French empirical school.

The Associationist denial of general ideas as merely representations of the particular as perceived by the senses was attacked by the German idealists. Leibniz (1646-1716) emphasized the spontaneity of the soul and reduced all matter to the "monad", a real, non-spatial, indivisible part owing its existence to divine creation. The monad with the clearest perceptions is the soul; matter is the world imperfectly perceived. Freedom of will is equated with clearness of perception. Here the importance of perception is recognized without denying the existence of the non-material. Kant (1724-1804) while accepting Hume's position that all thinking depends ultimately on experience, insisted that experience could not provide the mechanism by which its own sensory data could be organized. Universal 'forms', space, time and categories, are possessed innately and serve to pattern sensation. This is in fact the position which was later to be adopted by the Gestalt school.

Kant's supposition of innate, universal laws which control the perceptions and reactions of all men was to influence educational thought. Rousseau (1712-1778) in the 'Emile' had stated a similar point of view in non-philosophical terms. He asserted that man was naturally good and that civilization perverted this goodness. An education from nature was called for, an education of man which develops "all the capacities that enable him to give effect to the basal impulses of his nature". (Rousseau, 1911, p.261). This flew in the face of the rational scepticism of his time and was criticized by Voltaire as contrary to reason but it satisfied the needs of the time. The empiricists in Britain, Voltaire and the Encyclopaedists in France, had succeeded in disproving the old order; Rousseau gave hope that a new order could be built. The first approach advocated the freedom of the individual, the second the equality. Scepticism on the one hand and idealism on the other helped to bring about the French Revolution. The French Revolution helped to stimulate further thought about the individual in society. Hegel's Philosophy of History, Positivism and the beginning of Sociology gained their impetus from the Revolution.

Rousseau's Emile had tremendous implications for education. Based as it was upon a belief in the essential goodness of the individual, it placed the onus of developing this goodness upon education as given by parents

and school and this doctrine is implicit in "progressive education" to this day. Pestalozzi (1746-1827) was the first to actually implement an educational system of the kind envisaged by Rousseau. He insisted that all children are equal in their capacity to benefit by education, a point of view with a long history but with particular derivation from Descartes and one especially suited to his time. Although, theoretically an education of this kind should be anti-individualistic, Pestalozzi's determination to overcome the defects wrought by faulty environment assured an attention to the individual which was new to the history of education. He emphasized the importance of discovering the potentiality of each child and then making "this particular capacity the centre so to speak of his intellectual activity and (using) it as a means of introducing him to the intellectual life, of stimulating within him an effort to widen his general outlook". (Pestalozzi, 1913, p.347). In his actual classroom methods he went far towards realizing this aim. His influence was extensive and educators from many different countries studied his methods.

The nineteenth century began with two principal schools of thought, one, centred in Britain, emphasizing empirical observation and particular perceptions, the other, centred in Germany, emphasizing a priori speculation and general concepts. These two schools of thought were to fuse

in modern psychology although their identities were to persist in the Behaviourist and Gestalt schools. Historically they were themselves a continuation of the atomistic versus holistic views of life which we have observed in Greek thought.

Two Germans, Hegel and Herbart, beginning in the same tradition of idealism, produced two very different but very important contributions to the study of individuality. Hegel (1770-1831) took up the relationship of the individual to society and treated this problem more thoroughly than anyone since Aristotle. He concluded that society is to be constructed by the critical reason of the emancipated individual. The failure of individuals to do this, as evidenced by the Revolution, led him to the belief that the will of individuals in modern society does not contain that universality which is essential if the particular and general interest is to be reconciled. Thus the act of liberating was to be taken out of the hands of individuals who, because of their non-free state were incapable of choosing freedom of their own course. He ended by stating the rationale for the totalitarian state; 'The State is the embodiment of concrete freedom'. (Marcuse, 1954, p.203).

He saw free will as being in conflict with society. The individual, finding his freedom curtailed by the stringencies of society, turns his will inward and seeks absolute

individual freedom there.

This seems similar to Luther's establishment of Christian liberty as an internal value, an attitude which is quite consistent with tyranny and seems peculiarly German in character.

Herbart (1776-1841) followed directly in the tradition of Leibniz and suggested a compromise between idealism and associationism. He reduced existence to a multitude of presentations which are equivalent to the perceptions of Hume and which are acquired by processes similar to the mechanism of associationism but he differed from the associationists in believing that mental processes could not be the subject of experimentation. Freedom of will he equated with the ability to choose the clearer of two presentations and he explained the apparently independent action of the will by the presence of 'petites perceptions'. Will depends on knowledge and knowledge depends on education. Psychology is the science of education. He defined education as the formation of character and saw how the training of character might lead to the elimination of individuality. He suggested that this might be overcome by knowledge of the individual so that the educator could then enhance the desirable aspects of the child's individuality and discourage the undesirable aspects. The 'many-pointed star' of the child's original individuality could be developed into the perfect circle of thought' of

the well-rounded individual. He suggested studying the child's capabilities through observation of his interests, his disposition, his play, his memory-span and his speech. In fact Herbart laid down the basis for an educational psychology which emphasized individuality.

Froebel (1783-1852) had studied under Pestalozzi and produced a system of education which favoured individuality while minimizing individual differences. He believed strongly in the innate goodness of each child who, he believed, contained within himself humanity as a whole but expressed in a particular and unique manner. While insisting that each child must be treated as an individual Froebel believed that such treatment was aimed at uncovering this essential common humanity and a perfect education would make mankind as alike as angels. Froebel founded the Kindergarten movement and his ideas did much to bring about a more individual approach in schools even though indirectly they have favoured the doctrine of equal education for all children.

Rosenkranz (1805-1879) seemed to bridge the natural education of Rousseau, as developed by Froebel, and the scientific education of Herbart. While suggesting that education is the cultivation of innate powers, he suggested practical and scientific methods of doing so. There are three different levels of capacity for education, incapacity, mediocrity and talent and each level needs a

different kind of education. He described three types of individual education, aesthetic, practical and demonic, which would develop all aspects of the individual.

Meanwhile, in the empirical school of thought, contributions had been made to the psychology of the individual. Condillac (1715-1780) took the study of sensation as the basis of psychology and it was only one step further to make the study of the senses and the organs that produced these senses, the basis of the study of the mind. This came with Cabanis (1757-1808) who founded physiological psychology and brought in a new approach to the ancient idea of temperaments. He suggested that temperament is a result of the degree of harmony between the different organs of the body and that individual differences depend on the kind of balance which is maintained between the different systems, the nervous system and the muscular system, for example. In addition characteristics are acquired through modifications of the systems brought about by habitual actions. He stressed the importance of understanding the total development of the human being from childhood to old-age and supported Rousseau in describing education as the development of innate powers.

In England, James Mill, (1773-1836), explaining behaviour in associationist terms, ignored hereditary differences in individuals and stressed an education in which

children follow through a programme of developmental experiences which is determined by invariable natural laws. Both Mill and Cabanis, as empiricists, had arrived at a similar view of education to that of the idealists.

Bain (1818-1903) brought associationism to its highest point and contributed to both the general understanding of individuality and to educational thought. He believed that differences in powers of discrimination were largely responsible for differences in intellectual powers and that this determined educability. He criticized attempts to explain individual differences in terms of heredity alone and suggested that, in order to understand individual differences, it was necessary to consider "the history and the environment of the individual" as well as hereditary factors. Bain was a clear thinker and made an important contribution to psychology but he marked the limit to which the discipline could progress without experimental method.

Positivism

One step in this direction was made by the Positivists. Of these Comte (1798-1857) ought to be the spokesman. Eschewing all forms of a priori speculation he was impatient also of empiricism which he considered to be mere haphazard collecting of facts. He maintained that all we can know of reality is what we can observe, or what we can deduce from our observations, but that observation

must be carried out within the framework of a pre-conceived theory. This suggests modern psychological method in the testing of hypotheses but, in practice, Comte more often interpreted it as the selection of facts to support his theories. Nevertheless positivism made a decided contribution towards psychological method.

Comte is noteworthy in having applied positivist methods to the structure of society and he can be properly said to have founded modern sociology. In Comte the individual plays almost no part but is considered only in his role as a member of society.

Phrenology and Individual Measurement

Another attempt to derive a method for individual psychology is to be seen in phrenology. Outside of science as this movement was, yet it had a great influence upon both psychology and education. Gall (1758-1828) made careful observations of the nervous system and came to the conclusion that character and intelligence were the sum of the combined functions of the organ of the brain. Under the publicity methods of Spurzheim (1776-1832) the system of phrenology was developed. It was based on four assumptions: that the mind can be analysed into specific faculties, that these faculties are located in specific areas of the brain, that the size of each area determines the strength of the faculty located there and that the configuration of the brain can be observed

from the shape of the skull. In spite of the errors it contained, especially in the last two assumptions, phrenology proved the need for, and the interest in, a psychology of the individual. Character reading became a popular pastime and was used for very many of the purposes that intelligence and personality testing are used for today. Faculties were said to be capable of development through exercise and this led phrenologists to place great emphasis on education. They favoured a education which began from a knowledge of the capacities of the individual and proceeded to a development of these capacities by methods which are similar to progressive educational methods today. The movement lasted until the twentieth century and was certainly responsible for stimulating the growth of individual psychology.

Experimental Psychology

Psychological method, began ironically enough, not in the empirical school but in the idealist school. Weber (1795-1878) a physiologist, stated certain observations he had made upon the sense of touch, in the form of a law. Fechner (1801-1887), a philosopher in the tradition of Kant, interpreted Weber's Law in psychological terms and founded Psychophysics. In order to validate his hypothesis he established an experimental method. Although the Weber-Fechner Law has been shown to be not so general as Fechner had believed and most of his work has been returned to the

science of physiology from which it came, Fechner was important in giving the lead to experimental work. To Wundt (1832-1920) goes the honours of first establishing a specific experimental method for psychology. He, too, began from the German idealist position, taking Leibniz's theory of apperception, separating perception from apperception and then measuring perception. He founded the first psychological laboratory and his years of research there, added to that of Ebbinghaus (1850-1909), firmly established experimental method and finally provided psychology with the technique it had been waiting for since Bacon had pointed out the direction it had to take.

Francis Galton. Father of Individual Psychology

Psychology, traditionally concerned itself with attempting to formulate general rules of behaviour and, when individual differences were observed, they were fitted into these rules or discarded as errors. The Experimental Psychologists were no exception to this. Lawful results were found more consistently with large numbers of observations and large numbers of cases and the interest was in the consistencies and not the variations in behaviour.

Actually, the first published quantitative record of individual variations was made by an astronomer, Bessel (1784-1848), who measured the 'personal equation' in astronomical observation. Many other investigations were made of this factor but the tendency was to look at the results in terms of general tendencies rather than as

individual differences. This 'physicalist' approach, as Gardner Murphy has called it began to break up before a growing interest in the individual, as exemplified by the Rousseau school of education and the Phrenologists, and a new attitude towards science brought about by the theory of evolution. The latter introduced another dimension into science, that of time, and called for an historical approach which emphasized the measurement of the individual. The publication of the Origin of Species marks a division into pre and post-evolutionary psychology.

It was Francis Galton (1822-1911), a post-evolutionary psychologist, who began the scientific study of individual differences. He demonstrated that it was possible to consider, in a meaningful manner, variations in behaviour. In 'Hereditary Genius' he showed that Gauss's normal law of error could be applied to mental characteristics. He objected strongly to all pretensions of natural equality and carried out a wide variety of investigations into individual variations in mental imagery, word associations, memory, fatigue and sensations of different kinds. He began nature v. nurture investigations using twin and animal studies, and, except for the excessive range of his interests, is almost modern in his approach and techniques. His work was very important not only in indicating the possibility of research into individual differences but in providing, in the correlation

coefficient, the technique to accomplish it.

Spencer (1829-1903) was another 'post-evolutionary'. A firm supporter of economic liberalism, he represented a synthesis of late nineteenth century attitudes towards the individual. He saw the individual as progressing through dependence on the state to a time when all limitations in individual freedom will be overthrown. He placed great importance on heredity and felt that an education which aimed at forming ideal persons was unrealistic. The development of the individual should parallel the development of the race and we should aim to fit individuals into society. He replaced idealism in education with utilitarianism and foreshadowed an attitude to education which is widespread today, an attitude which frequently acts as an antidote to too much idealism.

James (1842-1910) cleared away much of the deadwood of the nineteenth century and prepared the way for twentieth century psychology. He did not deal in any detail with individual differences as such but his thinking on the free-will topic should be noted. He pointed out that the effort we exert and the resistance we overcome in an act of willing are both the products of our mental structure, and our experiences and, therefore, cannot be called 'free' in any psychological sense. He suggested that psychologists hand over the free-will controversy to

metaphysics where it rightly belongs.

With James, psychology took its place as a discipline and the volume of contributions to it increased annually. That section of psychology which concerns the concept of individuality might properly be called individual psychology if Adler had not appropriated the term for his psycho-analytical system.

The term Differential Psychology has been used for that portion of psychology which is concerned with individual and group differences in behaviour but there has been no consistent attempt to co-ordinate all that we know about the psychology of the individual. For the purpose of this study those aspects of psychology which have become focused in the study of personality, the nature versus nurture controversy and the measurement of individual differences movement will be considered briefly in order to bring the history of the development of the concept up to date. The educational implementation of the concept will be taken separately.

CHAPTER IV

THE BASIC DIMENSIONS OF THE CONCEPT OF INDIVIDUALITY

By the time of Plato the dimensions of the concept of individuality had been worked out. They were three-fold: philosophical, psychological and educational. Mankind was to be concerned with questions arising from this concept, questions along all these three dimensions, right down to the present day. The dimensions, as I have called them, are not disparate. Frequently the same individual speculates along all three lines of approach. Some questions appear to belong to two approaches. For example, the question of determinism, an ethical one, co-incides closely with the psychological question of nature v nurture. But, in general, these dimensions have been chosen because they deal with three levels of thought, abstract speculation, science and applied science, and because the questions that have been asked about the concept of individuality can be summarized under these three headings.

The Philosophical Dimension

Along this dimension are all lines of enquiry which try to explain the nature of individuality. The early Greek philosophers tried to find the clue to Being and, in considering the nature of an object, or of man himself, found that they had to make a distinction between the actual

individual object that they perceived and those characteristics of that object which were general or universal. This led to the question of substance and accident and the problem of individuation was further explored.

These are problems in metaphysics - properly of that branch of philosophy known as ontology. Maritain has called this branch of philosophy, "theoretical philosophy". (Maritain, 1951, p.114).

There are other philosophical questions which arise, however, questions concerned with worth or value. The early Greeks, for instance, were preoccupied with the relationship of the individual to the State and the relative importance of each. This question has re-appeared over and over again in early Christian thought, during the Renaissance, at the Enlightenment and with the rise of Nationalism. It is still an important issue today. Again the question was raised of the extent to which the individual has freedom of action. If we postulate an omnipotent Deity or, denying a God, explain human behaviour in mechanistic terms, then we arrive at determinism. The doctrine of grace, pre-destination and behaviourism are all different aspects of this idea. These are ethical problems, belonging to moral science or "practical philosophy". (Maritain 1951, p.111). Thus, along the philosophical dimension, there are two main lines of

enquiry, which I will designate theoretical and practical considerations.

The Psychological Dimension

Concern with the nature of the individual rather than the nature of individuality is the business of psychology. This can be viewed as "theoretical" when it is concerned with the drawing up of constructs to explain and describe individual differences e.g., the theory of temperaments and as "practical" when it is concerned with observing and measuring individual differences.

In contemporary psychology, where theory depends on observation and measurement, the distinction is no longer valid. In earlier times when psychology was almost entirely speculative the distinction was valid. Frequently, for example, we find attempts to measure individual differences outside orthodox psychology - in the fields of education, medicine and phrenology for instance.

The questions with which we are concerned along this dimension are therefore "What is the nature of the individual?" "In what ways does he differ from his fellow men?" "From where does he gain his individuality, from his nature or his nurture?" "How shall we measure these differences?"

The Educational Dimension

Consideration of the concept of individuality inevitably raises the question of how far it is consistent with education. This question is bound up with the ethical question of the relationship of the individual to society and with the psychological one of the nature of the individual and the manner in which he develops his individuality, but it is properly a matter of educational theory.

Herbart gave the question of the reconciliation of individuality and education its clearest consideration but we shall find it discussed from earliest times to the present day.

A more practical problem has been how to adapt education to cater for individual differences.

Quintilian made the first important contribution here but modern needs make the question, "How can education cater for individual differences?" an urgent one today.

So there are three basic dimensions or aspects of the concept and each one will be treated according to its theoretical and practical considerations, although these terms, of course, have rather different meanings when used in these three different contents. Different questions which have been raised about individuality will be followed through to show the development of the idea and its influences upon educational psychology today.

CHAPTER V

THE PHILOSOPHICAL DIMENSION

a) Theoretical (Metaphysical) Considerations

The metaphysical problem contained in the consideration of the nature of individuality became identified in the Middle Ages with the Scholastic controversy of Realism. It had its roots in the opposed views of Plato and Aristotle on the origin of the universe and so on the origin of individuality. Does man, for example, owe his individuality to the way he looks, the way he behaves, the sum total of his personal characteristics? Is he an individual, in other words, by virtue of the accidents which mark him off from other men? Or, alternatively, is he an individual by virtue of his share in what all other individuals hold in common - a share which varies in quantity but not in quality?

The Platonic view, descended directly from the primitive, animistic conception of life, was concerned with understanding the general principle behind existence, a principle or force which was believed to pervade everything. To Plato the idea or essence of everything was contained in this general principle, this universal eternal state. The phenomenal world was a degeneration from this ideal pattern. This point of view put the general before the specific and minimized the importance of individual differences. The

purpose of philosophy was considered to be the progressive stripping away of the layers of accidents which obscure the ideal pattern. This was the view represented by Plato. It led to a lack of interest in phenomena and in the methods of observation.

The second point of view was expressed by Aristotle. He objected to the notion of two levels of existence and the supremacy of the immaterial. He regarded the individual from two aspects, that of matter and that of form. Form is the function of matter. The soul is the form of the body and is therefore its functioning reality. It is not form, as Plato had believed, which is the individuating principle since form is essentially the way in which the matter behaves. The individual nature of anything is inseparable from its matter. Aristotle did not see the observed thing as having degenerated from the ideal but considered phenomena as the evidence from which the essence, or real nature of a thing, may be deduced. When translated into psychological terms this meant that individual differences needed to be observed in order to arrive at an understanding of the individuality of the subject.

The Realism Controversy

Although Plato and Aristotle were in opposition over these views the issue was not seen as a crucial one

until the Middle Ages. The Stoics and the Epicureans helped to keep the matter alive although they did not separate the question of the nature of individuality from such questions as the nature of body and mind nor did they keep strictly to the positions adopted by their predecessors. Stoicism, for instance, was a simplification and a humanization of the work of Aristotle, yet in the question of individuality, it was closer to Plato. Like Plato the Stoics were looking for a cure rather than an explanation and their cure was the subordination of man to a general principle.

The Epicureans were atomists, concerned with the particular, and they had little interest in the general. Thus they contended that Stoic Nature and Reason were useless abstractions and, in denying their validity, achieved a form of materialism. Lucretius continued this emphasis on the particular and kept alive some interest in the nature of individuality but, as the world took over the Christian concept of life such speculation dwindled. Christianity provided an answer to the question, an answer which was predominantly Platonic. The individual exists only to the extent to which he exists in God. Each individual is part of the Body of Christ. He is different from other individuals in the way that parts of the body differ from each other. Each one has its own function but all are inter-dependent. "One member suffereth, all the

members suffer with it, or one member is honoured, all members rejoice with it." (1 Corinthians, 12, 26-27)

It was not until the ninth century that we find any sustained consideration of the nature of individuality. John Scotus Erigena, described by de Wulf as the "greatest thinker and the isolated one in the Ninth Century," considered the relationship of the individual to the universal. The created world is made up of essences which are derived from Ideas or "archetypes in the Word". (Leff, 1958, p.78). In looking at anything we are aware of its colour, shape and size which are essences; matter itself is unknowable.

Each individual reveals, through its essences, the nature of which it is composed. Each individual belongs in turn to its own genera and species which themselves have their sources in divine Ideas. All natures are the gift of God; their relative merits are determined by their position in respect to Him. The further away, the more inferior their nature. This is "one more example of the almost inexorable working of the Neo-Platonic universe which regards all being as progression of essences, steadily diminishing in value the further they get from their source. Their point of return comes at the moment when they cease to maintain their own individuality and they are once more able to merge with their own first principle." (Leff, 1958, p.70).

Following Erigena the problem of universals pre-occupied scholastic thought. Being concerned with the correspondence between the general and abstract on the one hand and the particular and the concrete on the other, it is essentially the question of the reality or otherwise of individual existence. During this period, the controversy was between the points of view of the exaggerated realists on the one hand, and the moderate realists on the other. The proponents of exaggerated realism, following Plato were active in the period from the ninth to the twelfth centuries. They recognized the existence of genera and species and their correspondence to reality and saw the general as coming before the individual. The individual to them was merely a variation on a common essence. Each genus or species existing in thought represents a genus or species existing in reality. The human race forms only one specific reality scattered throughout all its members at any one time.

Peter Abelard was one of the opponents of this point of view and can be termed a "moderate realist". He stated that individual beings alone are capable of existence and that every existing substance is individual. Each human individual is a substance distinct from every other. The mind is capable of grasping the "natura rei" which is similar in all and ignoring the "individual envelope which clothes element of reality". (de Wulf, 1952, p.198) In many

ways Abelard recalls Aristotle but his treatment of the problem of realism has resulted in his being termed "the founder of nominalism". John of Salisbury in the twelfth century approved of Abelard's conclusions on the individual but was rather impatient of the realism controversy. In the *Metalogicon* he takes a practical approach and we find him discussing the necessity of "helping nature by use and exercise".

Aquinas talked of "variety" by which he meant all the differences to be observed in nature. He considered that secondary causes should not be taken as the reason for variety. Democritus and other ancient philosophers had considered that the distinctiveness of things had originated in the chance motions of matter. Aquinas considered this to be an insufficient reason since God created matter and thus the motions of matter must be purposeful. Others, such as Avicenna, the Arab thinker, had suggested secondary causes as the origin of distinctiveness. This is to say that differences come about merely through chance.

"Hence we must conclude that the distinction and multiplication of things is established by the intention of the first cause, which is God. For he brought things into existence in order to communicate his goodness to creatures and to be reflected in them. And because one creature alone was not enough for that manifestation, he produced many and diverse things, so that what was wanting in one may be supplied by another." (Aquinas, 1951, p.150)

Aquinas adopted a moderate realist viewpoint and returned to an Aristotelean identification of the individuating factor with matter. This was in direct opposition to the Platonic view which considered individuals to be differentiated through form. Leff says, "The re-introduction of Aristotle's view of individuation by matter was of first importance for Thomism, it showed that the individual thing was a distinct entity in its own right which, without matter, would not exist." (Leff, 1958, p.217) The explanation of differences in terms of matter suggested that Aquinas was "almost a materialist in that he always looks for a material explanation of the differences between man and man". (D'Arcy, 1953, p.114) Brett does not agree with this point of view (Brett, 1953, p.277) but it is clear that Aquinas was more prepared to admit bodily factors than any of his contemporaries: "The human soul at the beginning depends on the body for its individuality". (Aquinas, 1951, p.155)

Although he was less involved in the realist controversy than his pre-decessors he still felt it necessary to discuss the question:

"The individual matter, with all the accidents which individuate it does not fall within the definition of the species for we do not include in the definitions of man this flesh or these bones, or whiteness or blackness or anything of this kind. Hence this flesh and these bones, and the accidents which mark off this matter do not fall within

humanity. Nevertheless they are included in what is a man; therefore that which is a man has in it something which humanity has not got." (D'Arcy, 1953, p.113)

Duns Scotus went further than the moderate realists were prepared to go. He believed in the direct knowledge of the individual and maintained the conceptualist view that universals exist only in the mind. To Scotus the individual is the concrete thing, the actual existent. Different individuals of the same species share a common nature but that nature is not, of itself, common. It is individual and it is only universal to the extent that it is conceived as universal by the mind. (Harris, 1959)

Individuality then is caused by form, not matter, and differences in individuals are caused by differences in the intensity of the form. "Thus, to take an example, the human nature in Christ represents humanity in its highest perfection; it does not differ from Socrates or Callias, qua human, for it partakes of the same humanity; it differs only in the degree of perfection in which it partakes of the specific essence." (Harris, 1959, II, p.103)

Ockham went one step further and adopted the nominalist position. The individual alone is real; the individual alone can be known. Knowledge is therefore limited to experience. He understood the process of abstraction and saw that the Scholastic preoccupation with the reality or otherwise of the universal was unnecessary. Universals are mental constructs, the product of the mind

and serve as the material through which thought operates.
(Ockham, 1957)

This finally gave the coup de grace to the realism controversy and re-instated the individuality as an important principle. Scotus and Ockham, although themselves scholastics, brought the Middle Ages to an end and with the Renaissance the individual came into his own.

Humanism and the study of the individual.

The general had to be dethroned before the individual could take place as an object of study. Future speculation was concerned less with the metaphysical problem of the nature of individuality and more with the ethical problem of the relation of the individual to society. The scholastic attitude towards the individual continued in the attitude of mind which was later to be concentrated in the movements of idealism and romanticism.

The Humanists showed the marks of a transitional stage. They were still under the influence of Aquinas. Erasmus, for example, still implied a universal nature to which is added the special quality which varies from individual to individual. "The logical universal conflicts with the scientific; the abstract idea of man conflicts with the new concrete idea of individuals." (Brett, 1953, p.327) Actually the search for universal truths, for general laws, was to obscure the study of the individual

right up to the twentieth century.

One of the new philosophers who considered the question of individuality was Montaigne. He followed Ockham in asserting that there are no universals, no essences, but only individual beings. Montaigne considered that there is nothing fixed or unalterable in existence and he concerned himself with studying variations since: "No quality is so universal in this surface of things, as variety and diversity." (Montaigne, 1899, p.328)

His explanation of diversity is reminiscent of Aquinas. He argued that variety is necessary to prove God's goodness. Every person, no matter how idiosyncratic is a creature of God and appears from His infinite resources. Montaigne gives his argument a personal twist when he suggested that presumption has led man to accept some behaviour as normal and to say what is and what is not the image of God. Presumption was Montaigne's greatest hate, the one subject which really excited him. Through presumption, hubris, man makes laws for nature, defines man's place in the universe, says what is good and what is bad. He extended his criticism of generalization to philosophy and psychology, and reached the conclusion that any attempt to explain the soul is vain, that nothing can be known in its essence and that theories and definitions are wishful thinking.

Descartes provided a rather paradoxical figure in seventeenth century thought. In some ways he looked back to Scholastic and Greek philosophy and he re-introduced the theory of innate ideas. In other ways he looked forward. By separating body and mind and treating the body as a machine he helped to prepare the way for a scientific study of man. He was a realist in the Scholastic sense emphasizing universals and yet he was a naturalist and, like Bacon, stressed method. He founded a new approach to the study of man which was subjective and idealistic as opposed to objective and realistic in the modern sense.

Reflecting the same attitude was Comenius who came close to denying individuality in his desire to adhere to the Platonic notion of General Intelligence. Men are "necessarily united in these roots of Human General Intelligence". (Comenius, 1938, p.7) Men do not match up to their divine nature because of ignorance and sin. God has punished men by causing them to be thrown into confusion, as in the Tower of Babel. If ignorance is removed then men would return to their original nature and become closer to God. This attitude is typical of the idealistic point of view which was to continue alongside the new scientific movement. Although fundamentally denying individual differences, in that it saw men as essentially equal, it supported individuality by its humanistic attitude towards human nature.

"This would be the most perfect restoration of human nature to the likeness of God, if no man was bidden to desire anything against his will, to feel without lively and individual sensation, to act under compulsion - that is to desire, to feel, to act in vain, and to the destruction within himself of the image of God." (Comenius, 1938, p.10)

The Naturalist Attitude to the Individual

This attitude towards man was to continue in the educators, Rousseau, Pestalozzi and Froebel, and, in a modified form, in the philosophers Leibniz and Herbart. Another school of thought, originating in Bacon was in the direct nominalist tradition. Atomistic, concerned with discrete observations, it was essentially individualistic and yet, at the same time, less concerned with individuality than the idealistic school of thought. This paradox was brought about through its scientific concern with formulating general laws of behaviour and is exemplified by the Associationists who made so many individual observations and drew so few conclusions about individual differences.

The current feeling was individualistic, however, and empiricists like Locke made such resounding statements as:

"Man being born, as had been proved, with a title to perfect freedom and uncontrolled enjoyment of all the

rights and privileges of the law of nature, equally with any other man, or number of men in the world, hath by nature a power, not only to preserve his property, that is his life, liberty and estate, against the injuries and attempts of other men; but to judge of and punish the breaches of that law in others." (Locke, 1823, p.87)

Another empiricist, Hume, provided a modern-sounding explanation of individuality which he treated as 'identity'. This is the most universal of Philosophical relations and the most important identity is that of personal identity, the idea of self. He criticized the point of view which saw personal identity as a constant and unfluctuating mental state and showed that it depended on perception. Since it depended on resemblance, contiguity and causation like any other association of ideas all the "nice and subtile questions concerning personal identity can never possibly be decided." (Hume, 1911, I, p.248)

Leibniz offered an explanation which seemed to combine atomism and the unifying principle of neo-Platonism. He began from a criticism of Descartes and argued that matter is essentially an active principle and, as such, determines the reality in any "thing". This principle, the "real" in matter, is a spiritual principle, the activity of which determines all future states of the thing. Leibniz calls this force a "monad": "Each Monad is a living mirror, or a mirror endowed with inner activity, representative of

the universe according to its point of view, and as subject to rule as is the universe itself." (Leibniz, 1898, p.409) So, for Leibniz, the unit of substance is the monad which is a real, non-spatial, indivisible part which can represent the whole world. The totality of monads constitutes the world.

There are different kinds of monads, each one differing in "its internal qualities and activities, which cannot be other than its perceptions (that is to say, the representations of the compound, or of that which is outside, in the simple) and its appetitions (that is to say its tendencies to pass from one perception to another), which are the principles of change." (Leibniz, 1898, p.407) In this way individuality is explained in terms of the monad, which is both the aggregate of perceptions and the principle which activates them.

Idealism and the Individual

Rousseau stood out against the main current of thought of his time. In the eighteenth century the Enlightenment attitude was carrying all before it, particularly in France, and the materialistic view of the empiricists had been widely adopted. Rousseau opposed this attitude and, following Leibniz, saw individuality not as the result of blind chance, but as the result of the mind detaching, abstracting and re-uniting the facts of experience into units. The individual possesses innately

modes of perception which structure his experience. Left to himself his individuality will develop naturally according to natural laws. It is only in contact with other men that his real nature is likely to be traduced.

Kant is said to have been inspired by Rousseau and he built up the philosophy of idealism which re-asserted the primacy of mind. Individuality, in his hands, became again a soul, infused into the body at birth, rather than a schema built up by contact with the world. Individuality was conceived as powerful, possessing a completely free will, capable of resisting even the social pressures which were so feared by Rousseau. This was an important function performed by Rousseau and Kant - to rescue individuality from the determinist corner into which empiricism was pushing it. As Kant said:

"Every man is to be respected as an absolute end in himself; and it is a crime against the dignity that belongs to him as a human being, to use him as a mere means for some external purpose." (Paulsen, 1910, p.340)

The effect of this can be seen in Pestalozzi, "The cultivation of the powers inherent in human nature towards pure wisdom to the ultimate aim of education." (Pestalozzi, 1960, p.33), and in Froebel. The latter began from one eternal universal law in which science and religion come together, for he considered science to be the expression of the mind of God:

"This unity is God. All things have come from the Divine Unity, from God, and have their origin in the Divine Unity, in God alone." (Froebel, 1909, p.1)

So, to Froebel, individuality - the full and total expression of each single person - is the purpose of education. His belief in the essential goodness of mankind and his preoccupation with general rules both confuse and obscure the issue of individual differences. Speaking of this point, Isaac says, "Froebel, whilst he certainly insisted on the element of unique individuality in each child, was most concerned with the nature and needs of his universal humanity. He took little or no cognizance of any intermediate grouping, in the last resort what he contemplated was the Platonic reality 'Man' of which each individual child alike was an instance with the same divine principle in each seeking fulfillment in essentially the same ways. Every child has his own personality and gifts but, at the same time, in virtue of the divinity within him, must be equally capable of everything universally human." (Isaac, 1952, p.23)

Herbart and Nineteenth Century Philosophy

Froebel's approach had been theological rather than philosophical but his contemporary, Herbart, brought the Leibnizian explanation of individuality up to date. Just as Leibniz had combined the atomistic approach of the

empiricists of his day with scholastic universals, so Herbart created a bridge between current Platonic theories, like idealism, and the nineteenth century empiricism, associationism. Herbart's soul is a simple and indivisible essence possessing the quality of self-preservation. This quality gives it its activity which is manifested in mind. Each manifestation is known as a presentation and may be conscious or unconscious. There is wide border, between the two, made up of partially perceived presentations. The whole complex of presentations is known as the total apperceptive mass and this constitutes individuality. This mass is continually changing with the addition and subtraction of perceptions and yet continues as part of the same universal essence. He showed how, through education, this irregular grouping of presentations could be made into a harmonious whole. In this way, he reconciled the opposing points of view which saw man either as a bundle of associations or as a share in the universal idea.

The objective, observationalist tradition had avoided metaphysical speculation into the ultimate reality. A vague 'Humanity', inherited from the Humanists, was replaced by the ideal of progress and this received new impetus from the Theory of Evolution. Existence could then be seen as a process of becoming; from where and to where could be ignored.

Philosophical positions in the nineteenth century tended to group themselves into idealism and realism. The first of these was a relatively clear-cut school of thought, denying the material and regarding the individual as a spiritual being, part of the unity of spirit, whose chief purpose in life is to express his own nature. The second can hardly be called a school at all since it covered many opposing attitudes. There were two chief approaches; a Catholic or spiritual realism, descended directly from scholasticism, via Thomism, and a scientific realism or naturalism which was basically material. Both were alike only in their acceptance of the reality of matter. The spiritual realists saw the individual as a fusion of the material and the spiritual, free and responsible. The scientific realists saw man as a biological organism determined by the impact of his physical and social environment upon his inherited genetic structure. (Kneller, 1963, pp.75-82) although opposed in their interpretation of individuality all these approaches tended to place increasing importance on the individual.

With William James another point of view intruded, that of pragmatism. Here the transitory nature of the universe was emphasized. Reality is created by the interaction of the individual and his environment, with the individual possessing the potentiality of creating his own

reality. Here is a return to the Sophist view of man as the measure of all things. The individual is seen as essentially fluid and as being acted upon continuously by the groups of which he is a member. This final point was developed by Dewey who saw the necessity of measuring individual behaviour against scientifically verified outcomes. The individual as he saw him, is affected continuously by his biological nature and his social environment but possesses the power of self-realization.

THE PHILOSOPHICAL DIMENSION

b) Practical (Ethical) Considerations

Two issues may be classified under this heading: the relationship of individuality to society and the question of freedom of will. The first of these rarely appears in clear shape and frequently adopts an unphilosophical form.

Basically it is the question of the value put upon the individual and the conflict that develops between this value and the value put upon society as a whole. We can see the issue clearly today when western individual societies stand opposed to eastern totalitarian ones. The relevance of the contemporary concern with individuality is the feeling that, in the complexity of modern western society individuality is being lost.

As we have seen the issue was seen very clearly in Ancient Greece & Plato.

Plato, took up the work of Socrates and tried to effect a compromise between unbridled individualism and all-powerful state. He re-interpreted the function of the state, giving expression to what had never been made articulate before. To him the State was the "individual writ large" and by studying the State we could see, as it were, the individual in a microscope. In his master-plan the individual members of the State became living cells making up the organs of the body of the State. By relating, in this way, the individual to the larger unit he hoped to discover some solution to the problem of the crumbling social structure of Greece. In his admiration of Sparta as an efficient organization, he seems to us to have leaned too far towards totalitarianism. It was as if he had balanced out the two values, the individual and the state, and had arrived at the same conclusion as Aristotle, "The state is prior to the individual".

Basically Plato may be considered as a social reformer aiming to save Greek Society from its threatened collapse. His theories of psychology and education were subordinated to this aim and he ignored the variations in individual characteristics which his speculation revealed to him, in favour of the simpler, more acceptable concept of "the three metals". Aristotle, on the other hand, had

less interest in social matters. He was a pure scientist rather than an applied scientist. Employing his inductive methods, Aristotle tackled the problem of the individual's relationship with the state. He studied the constitutions of 250 different states in relation to the temperament and culture of their people. He criticized Plato's conception of the state as the individual writ large pointing out:

- a) that the individual is less self-sufficient than the family and the family less than the state, therefore unity and self-sufficiency are in inverse ratio to each other.
- b) concern with the whole body leads to neglect of the parts.

This led him to the paradoxical statement "the state is prior to the individual" by which he seems to have meant that man reaches full social maturity through his role in the state. This seems to be an early approach to social psychology (c.f. Kardiner and Sherif on the development of character). Davidson asserts that Aristotle considered that the value of a society depends on the strength of the individuality of its constituent members and that he maintained that "A unity is always higher in proportion to the independence of the elements which it unites and the highest possible unity would be one whose elements are absolutely independent." (Davidson, 1907, p.156)

On the other hand Eby and Arrowood consider that Aristotle "lacks progressiveness".

"His ideal was a small city in which each individual is subjected to the totalitarian interests of the state." (Eby and Arrowood, 1940, p.422).

Subsequent philosophers were concerned with "policies for living rather than theories about life". (Brett, 1953, p.131). With the break-down of the city-state the individual was thrown on his own resources. He had less political freedom but, perhaps, more personal freedom. For this personal freedom he was unprepared and he needed to fit into some system in order to help him to endure the forces of life. The Stoic and Epicurean philosophies were two such systems which anticipated the Christian solution to the problem of the individual in society.

Christianity brought a new estimate of the value of the individual. Jesus considered the individual soul of incomparably more value than any amount of material possessions but it was not the individual as a rational being that was the centre of interest but the spiritual individual. Reason was replaced by emotion.

"The real difference between Platonism and Christianity is to be found in the difference between Hebraic and Greek temperaments, between the desire to feel strongly, to nourish lofty passions and the (Greek) desire to subdue passion by reason." (Brett, 1953, p.171).

In St. Paul we can find the expression of these

early Christian ideas on individuality. We find first of all the Hebraic view that the human race originated in one individual as compared with the Greek belief that man began as a race. Then we can find a statement which sets out the value placed on all individuals whatever their social importance, "There is neither Jew nor Greek, there is neither bond nor free, there is neither male nor female, for ye are all one in Christ Jesus." (Gal. 3, 28).

This would also indicate that individuals were valued not for their unique qualities, their differences, but for what they held in common, their immortal soul.

"Even the righteousness of God through faith in Jesus Christ unto all them that believe; for there is no distinction; for all have sinned, and fall short of the glory of God." (Rom. 3, 22 and 23).

Christianity, therefore, set up a new kind of universal citizenship in which differences of race and class, while surviving, were of less importance than the new equality in Christ. The aim was to bring all souls to salvation and no distinction was made between the souls to be saved. Self-mastery was the aim of the early Christians as temperance had been of the Greeks. This self-mastery implied to them subjection to authority.

"Let every soul be in subjection to the higher powers." (Rom. 13, 1).

The purpose of this was to impose, on a heterogeneous following, some semblance of order and discipline. Thus we find at the same time both a strong emphasis on individual worth and an insistence on subjection to authority. It was felt even at this stage that subjection to authority was a way of earning merit - subjection of children to father, of wife to husband, of servant to master, of master to God.

As time went on, this emphasis on authority began to overcome concern for individuality and man began to be submerged in society almost as deeply as he had been before the Sophists. Different views of the Middle Ages have been expressed by interpreters of different backgrounds. Maurice de Wulf, a Catholic and apologist of the period, says: "Characteristic customs sprang up: they were a function of what may be called the feudal and communal virtue par excellence, namely, that of the personal value and dignity of the individual. The feudal man lived as a free man and alienated his activity only by contract." (de Wulf, 1952, p.46).

On the other hand Zillboorg and Henry, considering the period from the point of view of medical psychology, say: "Man was thus lost as an individual, and lost he was despite the fact that traditional theology endowed him with an absolute free will. Suspended between the devil and eternity, man seemed to have nothing left to him but to

struggle constantly against temptation and as constantly to rap at the door of the beyond. The ancient pantheistic emotions and philosophy, within the frame of theology guided by personal God were submerging all other human interests." (Zillboorg and Henry, 1941, p.116).

With the Renaissance we see a return to the ideals of Classical Greece including that of individuality. Burckhardt says that, in the Middle Ages, man was conscious of himself only through some general category, race, family or corporation for example, and that in Italy at the time of the Renaissance "an objective treatment and consideration of the State and of all the things of this world became possible. The subjective side at the same time asserted itself with corresponding emphasis; man became a spiritual individual and recognised himself as such." (Burckhardt, 1945, p.71). This, he says, was due mainly to the political situation in Italy where numerous small despotisms and republics rivalled each other and gave the opportunity for exceptional personalities to flourish.

The Reformation brought in another attitude to individuality, one that is more comparable to early Christianity. Protestantism placed great emphasis on individual salvation and the 'Protestant ethic' joined with humanism to form the basis of the modern attitude towards the individual. Even the doctrine of pre-destination, anti-individualistic as it would appear to be, was

interpreted in the mood of the time. Rigid as moral and doctrinal prescriptions were, there was scope for practical and economic individualism, and some of the really creative individuals of later centuries were Calvinistic in religious persuasion.

With the beginning of the Scientific Movement, the ethical question of man's relation to society began to be treated as an empirical science. Bacon first showed the possibility of a science of the individual in society and Hobbes wrote, in the Leviathan, a text-book on sociology. Brett says: "Hobbes comes very near to a purely social psychology, concerning himself most with individuals in their mutual relations. Technically there is no social psychology to be found in Hobbes, if the term social indicates the study of the individual as produced in and through society. But in another sense the great value of what Hobbes has to say lies in the fact that he thinks more of individuals than parts of individuals." (Brett, 1953, p.370)

He saw the desire for power as the motivating force in mankind and society as the result of this force acting upon individuals.

Associationism, with David Hume, had become materialistic and the individual had been reduced to a 'bundle of perceptions'. Here was a danger to individuality, that, in reducing man to a helpless tool of circumstance, all his hard-won individuality would be lost.

A reaction to the materialistic view, which was widespread during the Enlightenment, was begun by Rousseau and was developed by Kant into idealism. Rousseau appears to be 'all for the individual' but, in his equalitarianism, his neglect of individual differences, he posed another danger to individuality. That his own emphasis on the individual, as described in the education of Emile, is a means to an end rather than an end in itself may be seen by some of his later educational writings. He advocated for the Poles a national system of education and told them: "It is education that should put the national stamp on men's minds and give the direction to their opinions and tastes which will make them patriots". (Rousseau, 1956, p.190) Pestalozzi, too, saw individuality in social terms. Impressed by the great social differences in his world, he saw education as a means of reducing these differences and felt that this process would ultimately bring all men together into harmony:

"Education is nothing else than the forging of the individual links in the great chain that binds men into one great whole, and educational failure comes chiefly from treating the links separately without regard to the chain to which they properly belong, when everything depends on securely attaching one link to the next, and making each strong enough and pliant enough to follow the daily movements of the whole." (Pestalozzi, 1913 a, p.138)

Froebel took this line of thought one step further and brought it back full circle to Platonism. He set great value upon the individual but upon the individual as sharing in divinity:

"For in every human being, as a member of humanity and as a child of God, there lies and lives humanity as a whole: but in each one it is realized and expressed in a wholly particular, peculiar, personal, unique manner; and it should be exhibited in each individual being in this wholly peculiar, unique manner." (Froebel, 1909, p.18) While insisting upon this unique individuality Froebel still looked ultimately towards the elimination of difference between man and man in their submergence in this universal humanity.

The interest in social institutions grew alongside man's interest in himself and, in the nineteenth century, we have careful attempts to work out the precise relationship between man and society. Hegel saw the freedom of the individual as expanded, rather than limited, by society since government emerged from man's reason. The State should be constructed by the critical reason of the emancipated individual, but, since the "individual in modern society does not have a will containing that universality which would reconcile the particular and the general interest," (Marcuse, 1954, p.185) then this act of emancipation must be taken out of his hands. Proceeding by much the same

route as Aristotle in deciding the 'State is prior to the individual' Hegel arrived at the extreme conclusions:

"The State is the embodiment of concrete freedom" and "It is a matter of indifference to the state whether the individual exists or not". (Marcuse, 1954, p. 204) In this way he provided the rationale for totalitarianism and the complete submergence of individuality.

The Positivist movement continued the work of Hobbes in social science. Comte, for instance, believed that man's social sense was innate. This fact, he said, had been proved by Gall but it was also made evident by the preponderance of the affective over the intellectual faculties which makes it necessary for men to join together for their common good. There is a hierarchy of human association; the individual, the family and the society and this means that the state is not made up of individuals but of families. Although this would appear to lower the status of the individual, Comte's conception of a morality outside of theology gave to the individual an ethical justification he had lacked up to this time:

"The restriction of our expectations to actual life must furnish new means of connecting our individual development with the universal progression, the growing regard to which will afford the only possible and the utmost possible satisfaction to our natural aspiration after eternity". (Comte, 1853, II, p. 555) Personal morality gives way to social morality which is based upon

the principle of evolution.

Spencer was another who drew his views of individuality from the theory of evolution with survival of the fittest as its basic principle. Comte had said that, 'all notions of public good, must be based on private advantage' (Comte, 1853, II, p.130) and this became the main tenet of utilitarianism. Spencer made very clear which he considered to come first when, contrasting the military and the industrial types of society, he showed that the latter results in: "inversion of the belief that individuals exist for the benefit of the State into the belief that the State exists for the benefit of the individuals." (Spencer, 1910, I, 575) Spencer reached the high water mark of individuality. At the end of the nineteenth century his class of Englishman enjoyed an individual freedom which was unprecedented. He believed that, by the application of the principles of liberalism and laissez-faire, this freedom would finally come to all men:

"A day will come," he said, "when every man will know how to unite in his heart an active love of freedom for himself with an active, sympathetic feeling for the freedom of others. Then the limitations of individuality which still exist, whether caused by legal fetters or by private force, will be finally overthrown; no one will be any longer hindered in the development of his individuality,

for each in maintaining his own rights, will respect the rights of others." (Spencer, 1910, I, p.575)

The Free Will Issue

The question of Free Will is central to the concept of individuality. Man's attitude to himself as a person is dependent upon how free he feels himself to be. If he feels that he is at the mercy of fate, that his future life is predestined or that his behaviour is completely determined by environmental forces, he will certainly be less likely to regard himself as an autonomous individual.

The Greeks saw man as essentially master of his own fate, although at times he became caught up in circumstance which he could not control. Greek tragedy is concerned with the fate of individuals, helpless to control their destiny.

Plato had begun to realize that behaviour could be determined by physical factors. Physical disease is caused by an excess of fire, water or earth which make phlegm or bile. Mental disease, folly, madness or ignorance could be explained in similar terms. As an example, excess of sperm causes excessive sexual activity which is, therefore, not a voluntary state. "For no man is voluntarily bad; but the bad become bad by reason of an ill disposition of the body and bad education". (Plato, 1871, p.580) Illnesses of the body when contained within

the body affect the motion of the soul and so bring about, "trouble and melancholy, of tempers rash and cowardly, and also of forgetfulness and stupidity." (Plato, 1871, II, p.580) He subscribed to nature and nurture as "the two ways in which all of us who are bad become bad, through two things which are wholly out of our power, and thus the planters are to blame rather than the plants, the educators rather than the educated." (Plato, 1871, II, p.580) The Greeks who had already seen man as at the mercy of the gods and of malignant fate now had this idea expressed in psychological terms.

Aristotle saw the importance of innate and irrational impulses and visualized education as directed towards developing control of these impulses. Men vary in the degree of control which they are capable of exerting and any individual may begin life deficient in moral virtue. Aristotle was able to comprehend wickedness that was due to a congenital defect in will power. "Bestiality is a phenomenon that belongs to the sphere of natural science, and is to be explained either as a failure of nature to produce the normal type or as a decline from the normal state due to such accidental cause as disease." (Brett, 1953, p.123) On the other hand he stressed the power of reason and the supremacy of the soul:

"We are masters of our actions from the beginning, right to the end, if we know the particular facts, but though we control the beginning of our states of

character, the gradual progress is not obvious any more than it is in illness, because it is in our power, however, to act in this way or not in this way, therefore the states are voluntary." (Aristotle, 1941, p.974)

Thus Plato and Aristotle had arrived at a balanced view of the freedom of the individual. They appreciated the forces which could determine his behaviour but stressed his ultimate freedom of choice. This conclusion - a practical determinism combined with an idealistic belief in freedom of action - seems to provide a satisfactory climate for the development of individuality.

To the early Stoics all behaviour is predetermined. Acceptable behaviour takes place when the individual will is in harmony with nature. In this way they tended to reduce the freedom of the individual to a mere acquiescence. Later Stoic thought placed more attention on the individual and, although they saw cause and effect as inevitably related, yet they considered man to be rational by nature and they considered it to be always possible for reason to control behaviour. Brett says: "The earlier Stoics were more scientific in temper; they lay emphasis on law and necessity, ending with fatalism. The later Stoics are more inclined to frame maxims and meditate on the uplifting of mankind; they grasped some of the principles of education and supplied in example what they lacked in theory; they failed to explain the

possibility of freedom but they succeeded in being free."
(Brett, 1953, p.148)

They faced up to death which places such an obvious limitation on individual existence by cultivating an heroic contempt. This, together with a belief in the universal brotherhood of man made life worth living and is their heritage to later generations.

"To Stoicism we owe the conception and first name of duty, the notion of complete personal independence and the ideal of universal brotherhood." (Davidson, T., 1906, p.173)

Epicurus makes Pleasure the final Good and Pleasure to him is a state of equilibrium. Excess is to be avoided since it disturbs the equilibrium. A life in which good things are enjoyed to moderation was, therefore, to be aimed at.

Man has freedom to choose this path since, by ingenious argument, Epicurus avoids the trap of fatalism. His argument is called the "declination of the atom". Basically he asserts that the atom maintains its power of self-motion. In all substances, no matter how closely the atoms may be packed (e.g. iron), their activity is constant. In man the activity goes on too, with the atoms cooperating to produce, as their effect, human behaviour. The atom has the power to throw itself in any direction and

thus produce any effect, that is, any behaviour. Since the power is inherent in the atom and is not imposed from outside, it is free and therefore human freedom is absolute.

In this way the Epicureans were able to maintain the freedom of the individual while still supporting a behaviourist explanation of life. They avoided determinism on the one hand and divine control on the other.

Lucretius, basically an Epicurean, was emphatic in his belief in the freedom of the individual and was confident that 'nothing hinders us from living a life worthy of the gods'.(Lucretius, 1947, p.318) Galen developed the Parmenidean concept of temperament. He considered that the will is completely dependent on temperament, that the evil soul is a diseased soul and that an individual with such a soul needs the help of a good man, in the same way that a diseased body needs a good doctor.

"The soul is the slave of the temperaments of the body since these temperaments may drive the soul out of the body, make it delirious, deprive it of memory and judgment and make it sad, timid and downcast as we see it in melancholia." (Galenus, 1941, p.91)

He saw the determinist corner into which his theories were leading him and said, "How then, it will be asked, can one be justly praised or blamed, hated or loved,

seeing that he has become wicked or good not of himself, but through the crisis, which he obviously receives from other causes? Because, I reply, we all have the fundamental power of welcoming the good, of admitting and loving it and of shunning, hating and fleeing from evil, without first considering whether this power has or has not been created." (Brock, 1929, p.243)

The question of free will became a central issue of Christianity. Once an omnipotent deity is pre-supposed, then the possibility of pre-destination has to be faced. The early Christians were optimistic. They laid emphasis on the autonomy of Will which soon came to be excepted from the variety of human differences. An individual might not have ability or aptitude but he was expected at least to try hard. Origen presented the arguments which were later to lead Augustine to his conclusions. He considered all creatures to have been created equal. Individual differences arose through the exercise of free will since all men turn to God in different degrees.

Brett suggests that the source of Origen's speculation was Stoicism. Adopting the dualism of nature he saw reason as one kind of movement, the others being (1) the motion imparted to inanimate objects (2) the movement of plants and (3) the movement of animals. Reason is given the freedom to choose from among various images or

sensuous experiences since it has a natural tendency to distinguish the good from the bad. God helps man to achieve the good and for this reason Brett says, "Origen was aiming at a theory of absolute liberty; he failed to see that he had ended in determinism because for him reason and will are ultimately the same." (Brett, 1953, p.183)

Augustine saw the 'will to attend' as the mechanism by which perceptions were selected from the countless sensations to which the body is subjected. Will is the most important aspect of the individual's psyche and was stressed in a desire to contradict the Gnostic doctrine that salvation could be acquired by individual effort. Faith was made the essential condition of salvation. Faith was not, however, a matter of knowing but a matter of believing. This made will the common denominator in all men since it was regarded as equal in every individual. Brett says: "There is perhaps no more persistent fallacy than this. To abstract the will from all other aspects of consciousness and assert that one can at least have good intentions, seems to be an inherent vice of human nature." (Brett, 1953, p.220)

The difficulty arises that, if the will is accepted as the means of salvation through self-improvement then innate differences in will must be considered. Some individuals are likely to be born with an inadequate will. God's grace is necessary to make up the deficiency.

"Augustine seems to have realized that the will is really a function of the whole nature of man, and therefore dependent ultimately on that nature." (Brett, 1953, p.220)

This implies that some individuals are deficient in conscience and therefore less responsible for their actions than others. Augustine was prepared to accept this along with the possibility of reform through grace. This involved the question of heredity which appeared at this time under the heading of original sin. All men are born with original sin, or hereditary weaknesses, grace at baptism strengthens him for the way to salvation, more grace is needed throughout life to counter-act these weaknesses. Grace comes from God, therefore man's fate can be said to be in the mind of God. This is pre-destination which although never stated explicitly by Augustine, was one of the conclusions to which his thinking could lead and is one of the doctrines which must be re-examined periodically since it affects man's attitude towards himself and his fellow men.

From Augustine's conception of original sin came his belief that human nature is essentially evil for, if man unaided cannot achieve salvation, then man unaided is damned. Augustine's doctrine of grace was the accepted explanation of free will during the Middle Ages. Aquinas re-introduced reason as the pre-eminent faculty and so

prepared the way for the Renaissance.

Free will is when an intellectual substance is not committed to one determinate good. This attribute is not acquired as a habit but is a faculty of the mind which has two aspects, wishing and choosing, or will and free will.

"Man has free choice, otherwise counsels, exhortations, percepts, prohibitions, rewards and punishment would all be pointless. In explanation note that some things act without judgment, but more from natural instinct than deliberate adjustment, as when a sheep flees from a wolf. Man, however, can act from judgment and adaptation in the reason; a free judgment that leaves intact the power of being able to decide otherwise--- A man has free choice to the extent that he is rational." (Aquinas, 1951, p.261) This was denied emphatically by Duns Scotus who rejected the material basis of the reasoning of Aquinas and avoided any implication of either physical or psychological materialism. He dismissed Aquinas's comparison between intellect and will as invalid and one which would lead logically to determinism. He denied that the will must strive after happiness or, indeed, after any end. It is motivated towards such an end but can always turn the other way. Aquinas placed reason before will while Duns Scotus reversed the order.

Will is the basis of right action. One of its functions is to select from among the various indistinct

impressions which make up the content of the mind. First thoughts are merely events, indistinct impressions. The will retains the indistinct thoughts, directing itself to them and controlling their relationship to the central power of thought. Anticipating the idea of fringe of consciousness Duns Scotus said that the will may raise to consciousness an indistinct thought. Thus the will is the highest power of the soul and stands above the intellect since it decides whether the act of understanding will take place or not but it is not, as such, necessary to cognition. Intellect and will together form the rational soul.

The humanists, in their dislike of scholastic quibbling, tended to leave the question of free will severely alone. One humanist who expressed an opinion on the subject was Lorenzo Valla. In his "Dialogue on Free Will" Valla attacked the Aristotlean and scholastic reconciliation of free will and divine providence. He stated that it is irrational to try to understand the paradox that while God either gives or withholds grace to specific individuals at specific times, he can still be said to allow men free will.

"The cause of the divine will which hardens one and shows mercy to another is known neither to men nor to angels." (Cassirer, 1948, p.180)

His arguments were approved later by both Luther and Calvin so that Valla can be justly said to have

anticipated the reformers in this interpretation as well as in his interest in the early fathers, in his denial of the validity of good works, in his distrust of monastic life and in his criticism of the temporal power of the papacy. His arguments, developed by Calvin, were to affect the thought of a wide section of the Christian world.

Luther, who began as a humanist, ended up in agreeing with Valla and Erasmus who initially approved of Luther criticized his views in a Treatise on Free Will.

"For Luther was not outspoken in beliefs which we should call Calvinist and which left no room for the humanistic belief in the goodness of man. To Erasmus, Luther's belief in pre-destination was no better than the mediaeval belief in original sin." (Bronowski and Malish, 1960, p.74)

Calvin took Luther's doctrine of pre-destination to its logical extreme. Man is incapable of altering his fate; he is pre-destined either for heaven or hell. Although this would not appear to be a doctrine which would encourage individuality, and it was certainly not seen in this way by Calvin himself, it became in later days a force acting for the freedom of the individual. For this reason an emphasis was placed on education, for it was reasoned that unless everyone is given the opportunity to be educated, it can not be determined who is saved and who is damned. Thus Geneva set up for the first time a universal education system.

Then again economic individuality was openly supported and Calvinists in later days became the exponents of economic liberalism. This came about partly through the doctrine of Calvin and partly through the political set up of Geneva where the Church was "not simply an institution for the worship of God, but an agency for the making of men fit to worship Him." (Fairbairn, 1905, p.364)

Luther and Calvin had arrived at pre-destination by returning to the early Fathers of the Church and particularly to St. Augustine. Within Catholicism the Jansenists arrived at the same position by the same route. Although the soul at Baptism is given the chance of salvation, it still needs God's grace to achieve it. Because of the corrupt nature of man, he is always liable to go astray. Orthodox Catholic theology emphasized that every individual receives sufficient grace to achieve salvation and that it is the function of man's free will to use or neglect this grace. Jansen emphasised that this grace came from God who could dispense it or withhold it as He willed and that the individual has no power of himself to help himself.

This doctrine came very close to the Calvin doctrine of pre-destination and, as such, it was condemned by the Church. The implication of such a doctrine would seem to be a complete fatalism, since man is either one of the elect or one of the damned and has no control over

whichever he is. Neither the Calvinists nor the Jansenists, however, took the step which led to this logical conclusion and both placed great emphasis on education. Man's nature is corrupt and weak, education is needed to strengthen and develop it. No one can tell who is the elect since God's grace can be given to anyone at all. Therefore every child needs the best possible education to prepare him for whenever God's grace may be bestowed.

Another approach to free will also took its lead from Augustine but this one went in a different direction. Montaigne anticipated Leibniz's theory of apperception with a description of imperceptible factors.

When we have to choose between two apparently equivalent objects we are not controlled by chance nor by the will. Differences between the two objects really exist although they are imperceptible to our conscious awareness. These subconscious factors cause us to make a decision one way or the other. This is one more of Montaigne's arguments to "demolish the presumption that man knows himself and rules himself." (Brett, 1953, p.300) It appears to have been derived from St. Augustine and his "intentness" and leads directly to Leibniz and Herbart.

Leibniz developed the idea of unconscious mental states and suggested a graduation from the completely unconscious to the completely conscious. There is a level below which minute perceptions do not reach awareness but

they may still influence the mind.

"Everything we know is developed out of our own nature, that is, it is obtained by reflection, by rendering conscious the perceptions which before were unconscious. Thus, all in the end depends upon unconscious perception, whose possibility was denied by Locke, and whose necessity was demonstrated by Leibniz". (Russel, 1949, p.158)

Appetitions too are classified according to degree of awareness but here it is a matter of inclination or will and not of perception and the gradation is from blind impulse to rational will. Davidson has presented diagrammatically the evolution of the monad. (Davidson, 1906, p.49) This sums up Leibniz's theory as applied to ethics. The end of conduct is to be able to act with the highest degree of freedom and this implies the highest degree of perception or knowledge and the highest degree of pleasure. Freedom does not imply an absolutely undetermined choice. Leibniz does not approach Kant's concept of transcendental freedom by which it is possible to will the opposite to which is considered most pleasant in order to prove one's freedom. To him rational will is determined by perception or intelligence and freedom of will consists in being able to choose between two or more perceptions. Herbart developed this line of thought most consciously.

"Will is desire combined with the supposition of the attainment of that which is desired." (Herbart, 1816, p.223) Herbart opposed the Kantian idea of transcendental

freedom of the will which he described as a "psychological illusion". He spoke of the popular conception of the will mediating between reason on the one hand and desire on the other as a myth. The soul can never transcend its own thought and freedom of the will is being able to choose the clearer of two presentations. Petites perceptions or subliminal cues explain the apparent independent action of the will. Volition then depends upon the presence or absence of presentations. Ultimately it depends upon knowledge and upon this fact is based Herbart's educational psychology, his "science of education".

The influence of Herbart, particularly his own theory of the unconscious and his theory of willing upon Freud, is apparent.

Descartes, in the seventeenth century, was one of the first post-Renaissance philosophers to re-open the question of will. He did not adopt an ethical approach but tried to make his explanation in terms of body and mind.

He stated a complete separation of body and mind, describing the body in mechanical terms and the mind in mentalistic terms. The pineal gland became the connecting link. To Descartes, both will and understanding are "perfect" in their own way. This ruled out the scholastic controversy about which has supremacy. We are not compelled or determined in our use of will for we can

withhold assent. Error, which replaced for him the "sin" of the scholastics, occurs when we choose and act on the wrong alternative. (Keeling, 1934, p.158-9)

The pineal gland was said to be that part of the body through which the soul exercises its functions. The same impressions can influence different men in different ways since "all brains are not constituted in the same manner and the same movement of the gland which in some excites fear, in other cause the spirits to enter partly into these brain-pores which serve to move the hands for self-defence and partly into those which agitate the blood and drive towards the heart." (Descartes, 1957, p.295)

This is interesting because it suggested, for the first time, a different kind of determinism from that of the Calvinists or the Jansenists, a determinism which left out all account of God. David Hume developed this materialist determinism, "As to free will, we have shown that it has no place with regard to the actions, no more than the qualities of men. It is not a just consequence that what is voluntary is free. Our actions are more voluntary than our judgments; but we have not more liberty in the one than the other." (Hume, 1911, II, p.302) This was to be the attitude of free thinkers throughout the nineteenth century and it was to culminate, as far as psychology is concerned, in Behaviourism. Kant reacted against this attitude to life and retorted with his concept

of transcendental freedom of the will. He considered the mind as being the co-ordinator of experience, a priori and above all experience. The will is an aspect of the mind and is completely free - free enough to will the opposite to what is most pleasant in order to prove its freedom. The proof for the existence of such a will lies in our ability to make such a choice.

Kant's was the popular view of will. Man likes to feel that he is 'the master of his fate, the captain of his soul.' Schopenhauer put the Will as the master of the psyche, with intellect as the guide. Our reason does not indicate how we should behave; we act in the way we want and then try to satisfy our reason. Will, he considered, gives unity to our consciousness, forms our personality and provides the very purpose of life. In this we find the source of Freud's libido; for Schopenhauer however, like Freud, emphasized the dynamic nature of the sexual element in this life force.

Yet, powerful as Will is, it is not free. Every individual thinks he is free because he is unaware of the forces that are moving him but, in the final analysis, he is completely determined.

James finally removed consideration of free-will from psychology and summarized the modern attitude towards this controversial topic. After reducing the question of free-will to the amount of effort we exert and the

resistance we overcome, both products of our mental structure and our experiences, he concluded, "The fact is that the question of free-will is insoluble in strictly psychological grounds". He went on to point out that psychology "thus abstracts from free-will without necessarily denying its existence. Practically, however, such abstraction is not distinguished from rejection; and most actual psychologists have no hesitation in denying that free-will exists. For ourselves we can hand the free-will controversy over to metaphysics." (James, 1950, p.179)

This would seem to be the position today. The individual is conceptualized as possessing a capacity for self-help which is founded in the integration of his personality. This is not seen as 'free' or undetermined, since it is impossible to isolate one part of the consciousness from the rest. It is perhaps best seen as a part of the compensatory mechanism of the personality which helps the individual to behave in a manner consistent with his total personality.

CHAPTER VI

THE PSYCHOLOGICAL DIMENSION

a) Theoretical Considerations

Along the Psychological Dimension we are concerned with the consideration of the nature of the individual. What makes one individual different from another? How are these differences organized within the essential individuality? How do these differences come about? These questions may best be studied by following their historical development so as to show the vicissitudes of theory and the gradual establishment of method.

These questions had been considered by the earliest Greek philosophers. Heraclitus first brought the individual into the field of speculation, Alcmaean and Parmenides looked for explanations of individual differences, Empedocles began the theory of temperaments and Hippocrates developed this into a system for explaining individual differences. Finally, the Sophists, by insisting that the individual was the only reality, made a thorough consideration of individual psychology inevitable. It was Plato who gave the individual this consideration.

It is necessary to essay a systematic description of Plato's psychology since it was to underly man's consideration of his own nature for a considerable time.

Plato's Psychology of the Individual

There are two souls, one mortal, the other divine. The divine soul lives in the head, the mortal soul in the breast. The mortal soul is itself divided into two. The part endowed with courage and spirit is at the top so that it may be under the control of reason. The heart is situated close to this so that it may circulate the blood throughout the body at any warning. The lung is placed around the heart as a soft spring so that:

"when anger was rife in it, the heart, beating against the yielding body, might be refreshed and alleviated, and might thus become more ready to accompany passion in the service of reason." (Plato, 1871, p.564)

The nutritive part of the soul was placed lower and, with it, the desires, and the liver was placed in between as a means of contact between the higher and lower souls. It was made "compact and smooth and bright and sweet, and also bitter, in order that the power of thought, which originates in the mind, might be reflected as in a mirror which receives and gives back images to the sight". (Plato, 1871, p.564) In this way pain and disgust are caused and also happiness and joy. The spleen acts as a sponge to clear the liver. Marrow, which is one of the chief constituents of the body, is made up of earth, fire and water. The grey matter of the brain is a particular kind of marrow. Physical disease is caused by excess of

fire, water or earth making phlegm or bile. Mental disease, folly, madness or ignorance are explained in similar terms.

Plato worked out a compromise with the theory which makes elements the basic constituents of the human organism. He saw these elements as psychological rather than physical. The three "forms", "kinds" or "parts" as he variously named the elements, are appetite, spirit and reason. Appetite, "the wealth-loving or gain-loving element" consists of both necessary and unnecessary appetites. Necessary appetites are permanent features of man's nature and are beneficial. Unnecessary appetites vary from unproductive but harmless desires to those which he describes as "wild", "bestial" and "lawless". The appetitive element, he suggested, is like a hydra "a beast with many heads, heads of beasts, tame and wild, and able to breed and change them at its will". (Nettleship, 1935, p.10) He considered that the majority of men live by appetites so that in the first place they do not interfere with the higher processes and in the second place they contribute to the good of the soul by making a healthy physical basis for life.

The second element is spirit which is a "hard element" and leads to both courage and aggressiveness. Education can develop this element into bravery or brutality according to the way it is handled. Spirit works in naturally with reason and is considered its servant for, while it may act irrationally, it never allies itself with the appetites against the reason. This element is especially

developed by athletes and Plato considered that too much emphasis on physical education leads to brutality, quarrelsomeness and self-will.

The third element, the highest, is the soul which Plato called the philosophic element. At first he seemed to see this element only as the component which balanced out spirit, that is, as gentleness when opposed to hardness. This quality he attached to consciousness of knowledge, and, as such it was "philosophic". Later modifications led him to place gentleness as an accompaniment of knowledge and as including music, painting, love of order and quietness. In later books of the Republic the philosophic element increased in importance until it occupied the position of "reason".

In the Phaedrus Plato gave a figurative account of the interplay between reason and appetite.

"I divided each soul into three parts, two of them having the forms of horses and the third that of a charioteer, and one of the horses was good and the other bad... The will-conditioned horse is erect and well-formed ..., a lover of honour and modesty and temperance, ... he needs not the touch of the whip, but is guided by word and admiration only. Whereas the other is a large mis-shapen animal, put together anyhow, ... the mate of insolence and pride, ... hardly yielding to blow or spur. Now when the charioteer beholds the vision of love and has his whole soul warmed with sense and is full of tickling and desire, the

obedient steed then as always under the governance of shame, refrains himself from leaping on the beloved, but the other instead of heeding the blows of the whip, prances away and gives all manner of trouble to his companion and to the charioteer." (Plato, 1871, I, pp.587-588) This analogy seems to suggest a struggle such as that between Ego and Id and marks a beginning to dynamic psychology.

When his concept of elements is considered closely it can be seen as the basis for a psychology of individual differences. Plato saw men as possessing the elements to different degrees and described three types corresponding to the three elements. He had laid the foundation, however, for a more subtle description of temperament since he had also described men as having the appetites to different degrees. He had also laid the foundation of a continuing tradition which has attempted to explain all mental phenomena in terms of bodily function, introduced the opponents in the nature versus nurture controversy and anticipated a dynamic theory of personality. Some of these issues were to remain on the surface continuously until modern times, others were to re-appear periodically throughout the centuries. One non-psychological issue which Plato began and which was to affect both psychology and education was the notion of innate ideas. In trying to explain ultimate reality Plato suggested the presence of universal categories, like truth and beauty. These were possessed innately by the child at

birth and were re-discovered through education. This idea was to lead to the supposition that all men are equal intellectually and, from that, to a view of education as self-expression.

The origin of the observationalist tradition

Aristotle continued many of the lines of thought begun by Plato but emphasized the importance of observation and scientific method. In this way he is more directly the founder of modern individual psychology. His methods of observation and classification were considered subsequently to be the model of scientific method and, as a result, hindered the development of science for sixteen centuries. (Brett, 1953, p.91)

Aristotle's search for the essence was not by way of introspection but by observation of a number of examples of the thing to be studied.

The soul is the form or essence of the body and different kinds of souls explain different types of behaviour. In each man there are three different grades or aspects of soul, the nutritive, the sensitive and the rational. The nutritive or vegetative soul is responsible for growth, decay, reproduction and nutrition. The sensitive or animal soul controls desire, imagination and all senses and movements while the rational or human soul operates reason, both theoretical and practical. Here again the

relative importance of the different souls will determine different types of personality and the link between the three kinds of soul and Plato's three elements may be seen.

The heart occupies the central position in Aristotle's physiology and is responsible for life, sensation, motion and heat. The brain functions only as a heat regulator for the heart. There is no attempt to describe temperament in terms of physiology but he sees individual differences as being due, in the first instance, to the failure of nature to produce the normal or as a decline from the norm.

Nature is an important aspect of Aristotle's psychology. By it human beings are endowed with certain potentialities which may develop into virtues or vices. These potentialities have their beginning in innate impulses of the soul,

"What prompts us to action is impulse and impulse has three forms appetite, passion, wish." (Eby and Arrowood, 1940, p.415)

Whether impulses lead to good or bad behaviour depends on reason and habituation. Reason is not necessarily sufficient to control impulse.

"Even when the mind does command and thought bids us pursue or avoid something, sometimes no movement is produced, we act in accordance with desire, as in the case of moral weakness." (Aristotle, 1941, p.597)

Impulses are brought under control by three inner forces, pleasure, pain and right reason. Pleasure and pain

must be used to direct the impulses of the child since he cannot be directed by reason. Through these methods virtue is achieved. Virtues were defined as "habits or attitudes which become fixed in the individual as a result of past choices and actions", (Eby and Arrowood, 1940, p.419) and Aristotle drew up a long list of intellectual and moral virtues. This theory explains Aristotle's attitude towards education which he saw as both instruction of the intellect and a form of habituation designed to evolve character and bring about happiness. "Goodness" or virtue is achieved by deliberately choosing a mean between excess and defect. Aristotle defined the mean in these words:

"The equal is the mean between excess and defect. By the mean in relation to the object, I understand the point which is equally distant from both extremes, and this is one and the same for everybody. By the mean in relation to ourselves, I understand that which is neither too much or too little and that is not one and the same point for everybody...Thus it is that everyone who proceeds scientifically avoids both excess and defect; he pursues the mean and adopts it, not, however, the mean in relation to the object, but that in relation to ourselves." (Burnett, 1913, pp.55,56)

This concept of the mean or norm has proved a useful construct in individual psychology. Aristotle was

also important in accepting that moral differences, as well as physical and intellectual, could be innate. This has implications for both the nature versus nurture controversy and for the question of free will which was to be so important during the Middle Ages.

Following Aristotle, interest continued in the explanation of mental states in terms of bodily function. Epicurus, for instance, explained the soul as part of the body, a particular arrangement of atoms, distinguished by mobility and lightness. It is similar to fire and differences in temperature determine individual differences. The soul has two parts, irrational and rational and is made up of a mixture of four substances. Three of these are gases, one is hot, another cold and the third is similar to air. The fourth substance is the essence of the soul which permeates the whole body. It is nameless and is the source of sensation.

Lucretius moved back to a pre-Parmenides explanation of the nature of mind and soul. This nature is made up of wind, heat and air, plus an unknown substance, a quickly moving force, which is the very soul of the soul and is all-powerful in the body.

It is the other three components which determine an individual's temperament. The preponderance of one or the other can produce anger, fear or tranquillity. This preponderance can be a permanent state or a temporary

imbalance and this seems to represent, in anger for instance, the difference between temperament and temper. Lucretius believed these differences to be innate, for training can do no more than modify the original constitution. He considered that these individual differences have to be recognized and taken into consideration, but that they are trivial compared with the power of reason, which, if it cannot expel original nature can yet govern and enable man to choose the Good rather than a lesser alternative.

"However much training gives some of them an equal culture, yet it leaves those first traces of the nature on the mind of each. Nor must we think that such maladies can be plucked out by the roots, but that one man will be a little sooner assailed by fear, while a third will take some things more gently than is right. And in many other things it must needs be that the diverse natures of man differ, and the habits that follow thereon but I cannot now set forth the secret causes of these, nor discover names for all the shapes formed by the first atoms, whence arises this variety in things." (Lucretius, 1947, p.317)

The Elaboration of the Theory of Temperaments

In the seven hundred years since Hippocrates the theory of temperaments had remained as the explanation of individual differences. Various elaborations had been made and the observationalism tradition introduced by Aristotle had based it more firmly on physiology. It was Galen who

systematized medical and psychological thought and founded the theory of temperaments in the form in which it was to survive until the eighteenth century. He suggested that all mental states and, in fact, the temperament of the individual are entirely based on physical factors. He set up, as a standard, a normal temperament which is made up of that mixture of qualities which, together, constitute the total health of a creature. The normal temperament of the best creature is the ideal. The implications of the assumption that temperaments have a physical basis were worked out by Galen, "Those who do not consider that the mind is helped or harmed by the bodily crases (mixtures) can tell us nothing about the differences in children nor again why there are so many differences in character, some individuals appearing spirited, other spiritless, some intelligent, others not so." (Brodk, 1929, p.244)

Galen's theory of temperaments is found in the treatises "De Temperamentis" and "That the Mental Faculties follow the Bodily Constitution". Here we find a re-exposition of Hippocrates' theory of humours. The brain is the centre of all sensation and motion and the principle under which the brain functions is "temperament", the degree of dryness or softness of the nerve tissue. The bodies of living creatures are made up of compounds of hot, cold, moist and dry elements which in different combinations form the types of temperament. At the time Galen was writing

i) Balanced temperament:

Normal mixing of all four temperaments..... (Type 1)

ii) Unbalanced temperaments:

- | | |
|---|--|
| | normal mixture of
moist and dry.... (Type 2) |
| a) Preponderance of warm
in combination with..... | preponderance of
dry over moist... (Type 3) |
| | preponderance of
moist over dry... (Type 4) |
| | normal mixture of
moist and dry.... (Type 5) |
| b) Preponderance of cold
in combination with..... | preponderance of
dry over moist... (Type 6) |
| | preponderance of
moist over dry... (Type 7) |
| | normal mixture of
warm and cold.... (Type 8) |
| c) Preponderance of dry
in combination with..... | preponderance of
warm over cold... (Type 9) |
| | preponderance of
cold over warm... (Type 10) |
| | normal mixture of
warm and cold.... (Type 11) |
| d) Preponderance of moist
in combination with..... | preponderance of
warm over cold... (Type 12) |
| | preponderance of
cold over warm... (Type 13) |

Figure No. 1. Galen's Theory of Temperaments. (Siebeck's system of classification)

(Siebeck, 1930, p.107)

"De Temperamentis", popular opinion in medical circles was divided into two opposing views. The first view was that there were two mixtures only; wet and cold on the one hand and hot and dry on the other. The second view held that there were four mixtures; wet and cold, wet and hot, dry and cold, dry and hot. Galen suggested that both views originated from misinterpretations of Aristotle. He held that there must be an even mixture, the standard or normal temperament which he called "the good mixture" or "eucrasis". Then there are four uneven mixtures in which one element predominates. These are called by the name of the predominating element. The final four mixtures are the opposed qualities, wet and cold, wet and hot, dry and cold, dry and hot. This makes nine temperamental types but both Siebeck and Brett suggest that Galen meant that there were thirteen types. The types suggested by Siebeck have been tabulated by Smith (see Table, Fig. No.1)

Different proportions within each mixture can give infinite possibilities. Greenwood describes Galen's temperaments according to mathematical terms and again arrives at thirteen distinct types. (See Fig. No.2)

"Let us take rectangular co-ordinates in a plane and measure along the abscissa one pair of opposities, say the moist and the dry; along the ordinate let us measure the other pair, the hot and the cold. Then the point (0,0) the origin represents the eucrasis, or perfect harmony and the

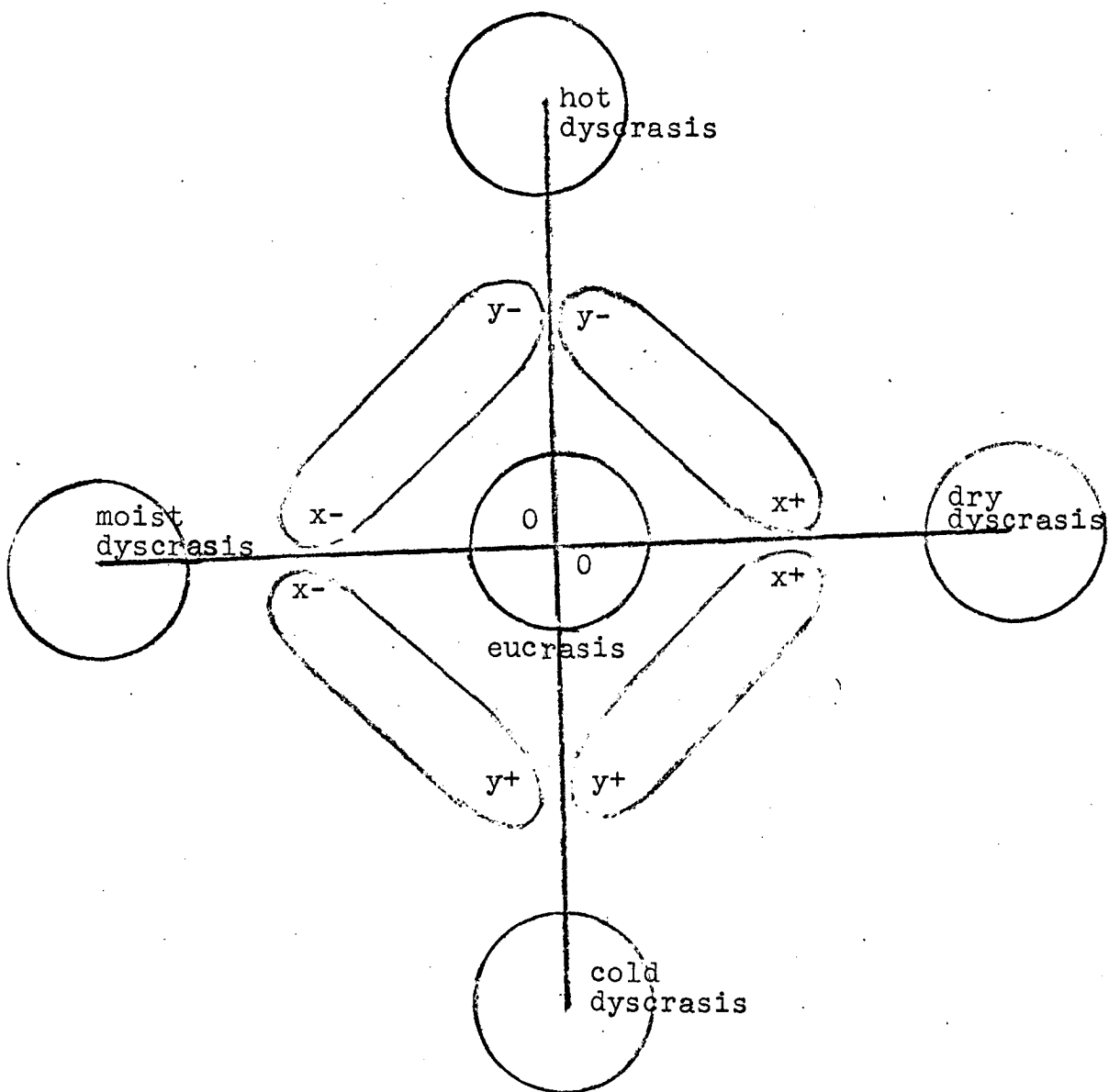


Figure No. 2. Galen's Theory of Temperaments. The introduction of a frequency axis Z through 0, at right angles to x and y, adds to the number of distinct types. (after Greenwood, 1920, pp. 7, 8)

points situated on either axis represents simple excesses, simple dyscrases.

Most (not all) earlier writers were preoccupied with these simple excesses but Galen embraced in his scheme all points of the plane. Thus we reach his conception of nine temperaments. The first, perfect eucrasis, is $(0,0)$, then there are 4 simple dyscrases - viz y , positive or negative, with $x=0$ and x , positive or negative, with $y=0$; finally there are 4 linked or compound dyscrases represented by $x + y$ both positive, both negative or of unlike sign. Galen then introduces a third dimension. If we suppose that the frequencies of occurrence of each combination of x and y are represented by a line of appropriate length at right angles to the plane of (x,y) we reach the now familiar concept of a frequency surface $z = f(x,y)$. Galen of course does not use this notation, since he lived 1500 years before it was invented." (Greenwood, 1920, pp. 7,8)

The man in whom the qualities are evenly mixed is called "the temperate character". Galen described him both physically and mentally. He is characterised mentally as holding the mean between boldness and fear, hesitation and haste, compassion and envy. The characteristics of the distemperate types were also described. Later writings of Galen tried to combine his own theory with the older theory of humours. This means that the cardinal humours,

blood, phlegm, black bile and yellow bile which are produced by combinations of the primary qualities, are themselves, combined to form the temperaments. The basic temperaments derived from these humours have survived to this day in the terms choleric, sanguine, melancholic and phlegmatic.

Three principal organs, brain, heart and liver were recognised in those days and psychic functions were attached to them. Intellect is said to operate through the "pneuma psychicon", the animal spirit, centred in the brain.

"The keenness of the mind depends upon the fineness of the brain substance. Slow thinking is due to its heaviness." (Zillboorg and Henry, 1941, p.91)

Temper is controlled by the pneuma zoticon, the vital spirit, centred in the heart, and desire is controlled by the pneuma physicon, the natural spirit. Man's individual nature is based upon the relation between these three organs. The character of each part of the soul depends on the temperament of that part.

Relapse into Introspection

The theory of temperaments, as explained by Galen remained the explanation of individual differences throughout the Middle Ages although it became oversimplified and mis-understood. Christian thinking did not

take into account the concept of individual differences. Human variation of the social and physical kind were ordained by God and had to be suffered and enjoyed, variations of the moral kind were the result of sin and had to be corrected by acts of will and variations of the intellectual kind were frequently denied completely.

(See Hodgson, 1906, p.284)

The concept of original sin was developed by Augustine and with it came the belief that human nature is essentially evil. Augustine developed an approach to the study of character types. Life is a progress from God to God with seven grades of being:

1. The soul as life sustaining the organism.
2. The soul as the perceptual agent.
3. The soul as a practical faculty supporting reason.
4. The soul as spirit, superior to body.
5. The soul as passive contemplator of truth.
6. The soul as a state of activity craving truth.
7. The soul as a state of ecstasy in a vision of truth.

Different men would operate at different levels of being while all men should aspire to reach the highest state—that of true knowledge.

Erigena explained how individual differences could be attributed to original sin. The true man is the Idea of man in God and in this Idea all possible individual human beings were eternally contained. Original sin caused separation into male and female, black and white, tall and short, good and bad. Once started, this process of separation continues inexorably. (Gilson, 1955, p.123) Adam and Eve sinning meant that the whole reality sinned and, as this reality exists throughout time each member of the human race is charged with original sin. When a child is born, no new substance is formed but just a new property of the reality already in existence. Human differences appear accidentally on the surface of humanity in the way ripples appear on the surface of a pool.

Abelard was one of the few mediaeval thinkers who took issue with this point of view. He credited each human individual with a "personalis discretio" which made up his individuality and which would continue to exist even if he were to lose all the accidents or individual characteristics.

John of Salisbury in the twelfth century approved of Abelard's conclusions on the individual and derided the point of view, which he subscribed to 'Cornificius', that nature alone determines the individual's talents. He suggested that natural ability is strengthened by cultivation but again, this early shot in the nature v nurture controversy is really another statement of the power of will

to overcome any natural defects.

Return to Aristotle

The tendency to move away from physiological explanations of human variations was halted by Aquinas. He took his lead from Aristotle in looking for natural causes. For example, he suggested that, although animals have many qualities superior to men such as eyesight, smell and hearing, man is superior in touch. This accounts not only for the superiority of man as a species but also for differences to be observed between individual men.

"Among men themselves it is because of the sense of touch, rather than of other senses, that some are more ingenious than others. Rough skinned and coarse-textured people are mentally rather inept, unlike those with a sensitive skin and delicate touch... A good touch results from a good complexion or temperament... People with a good sense of touch are therefore of a higher soul and clearer mind." (Aquinas, 1951, p.203) He disposed of the perennial notion of 'innate ideas' by suggesting that only pure spirits are innately endowed with a knowledge of truth. Human intelligence, "the intellective soul", lacks this inborn knowledge and depends on the senses for its perception of the truth.

Thomas Aquinas marked the culmination of scholastic thought, yet his contribution to the psychology of the

individual was meagre. Very little was added to this knowledge during the next few centuries.

The early Renaissance was very concerned with the individual and the development of the full, whole nature of man and this entailed the exploration of man in all his aspects. The change was made from the search after a theoretical psychology to the development of a practical psychology of observation and description. Here difficulties were encountered. Aristotle had provided the framework of a theoretical psychology and had given an impetus to observation but no techniques had been developed to make such observation either profitable or even possible. As a result, side by side with acute intuitive observation of man in art and literature, we have an anachronistic adherence to the theory of the four temperaments as a method of describing personality.

"It sounds almost ludicrous when an otherwise competent observer considers Clement VII to be of a melancholy temperament but defers his judgment to that of the physicians who declare the Pope of a sanguine-choleric nature; or when we read that the same Gaston de Foix, the victor of Avenna, whom Giorgione painted and Bambaia carved, and whom all the historians describe, had the saturnine temperament. No doubt those who use these expressions mean something by them; but the terms in which they tell us their meaning are strangely out of date in the Italy of the

sixteenth century." (Burckhardt, 1945, p.158)

Humanist Psychology

Erasmus is typical of Renaissance thought. His psychology was borrowed largely from Plutarch and, therefore, is Aristotelean. He saw the mind as made up of natura, ratio and usus. Natura is innate capacity, moral and intellectual which is affected by experience, discipline and instruction. Ratio is the thinking endowment which is not defined physiologically in relationship to natura. This makes ratio in education both the reason of the teacher acting upon the learner and the reason of the learner reacting with it. Usus is the application of acquired aptitudes and knowledge in appropriate circumstances. Natura, in men, is made up of very few instincts or innate ideas but with wide capacities which are revealed early in life. This is why education must begin very early from the beginning of life. Natura also includes a special quality which varies for each individual. This quality is a capacity, which may be inherited, for development in a certain direction according to outside forces.

"Nature, in giving you a son, presents you, let me say, a rude, unformed creature, which it is your part to fashion so that it may become indeed a man." (Erasmus, 1904, p.187)

Vives, a little later, brought a more modern

approach to individual psychology. Once uniformity ceased to be an objective, it became possible to study variety in nature. This meant that a theory of mind, beginning from differences and interested in the process of development from these differences, could originate. This was slow in appearing. Erasmus, for example, still implied a universal nature to which is added the special quality which varies from individual to individual.

"The logical universal conflicts with the scientific; the abstract idea of man conflicts with the new concrete idea of individuals." (Brett, 1953, p.327)

Vives marks a further point in this transitional stage which led to a full psychology of the individual. It was during this period that there was such an intense interest in the psychology of conduct and character. Most writers try to connect conduct with physiology - Vives, for example, used differences in the temperature of blood to explain differences in behavior, hot blood and courage, cold blood and caution. There was revived interest in Galen's theory of temperaments and Aristotle's physiognomy. Leonardo da Vinci, for example, studied facial expressions. The whole movement was a fore-runner of the psychology of personality.

One of the chief aspects of this movement was its desire to disassociate emotional states from moral values. Vives began by studying the passions and listing them as love, desire, hope, joy, anger, hate, resentment,

fear, respect, modesty, grief, longing, pity and envy. The two movements attraction and repulsion were accepted as the basis for distinguishing emotions and these superseded the long standing division into concupiscible and irascible. He also wrote scientifically of the emotions which, he said change the natural disposition in many ways "for the constitution of the body has a great influence on the strength of the mind and it is from the body that the passions take their rise. But the growth of morals is two-fold for they spring either from the nature of the body or from habit." (Vives, 1913, pp.79-80)

He spoke of the reasons for intellectual differences which "arise from the different nature of each person i.e. of the constitution and temperament of their bodies." (Vives, 1913, p.74)

Juan Huarte, who is described (Roback, 1962, p.24) as the 'first differential psychologist', returned to the theory of temperaments. These were based on the humours particularly along the dimension hot and cold. He believed that individual differences arise because of the different conditions under which the child is conceived - differences in the temperature of the seed, the mode of copulation and the moral state of the conception.

He pointed out that the ancients had seen that it was impossible to ignore individual differences but that none of them had really been able to say what was the

nature of these differences or how they should be measured.

He examined the concept of intelligence and stated that it consists of, " a) docility in learning from a master, b) understanding and independence of judgment, and c) inspiration without extravagance." (Roback, 1962, p.26)

The theory of innate ideas led Descartes back to the mediaeval error of assuming equality of intellect.

"Good sense is the thing of all else in this world that is most equally distributed---. The latent ability to judge well, to distinguish the true from the false, is naturally equal among all men." (Compayre, 1901, p.190)

Sometimes Descartes speaks as if it is the "ideas" which are innate and at others the "faculty" of thinking them.

(Keeling, 1934, p.168) Brett says that, once having made his statement of innate ideas, Descartes "strove earnestly to unsay it in every way except by open recantation." (Brett, 1953, p.355) He was obviously impressed by the universality of many ideas and the apparent spontaneity of perceptual knowledge (cf. Gestalt closure). Brett is prepared to accept Descartes's final teaching that innate ideas mean nothing more than the potentiality of thought but the influence of this line of thought was extensive. It led to a devaluation of the importance of hereditary differences and to the 'subjective' view of education favoured by Rousseau which saw human differences as the result of faults in nurture and education as the process which corrected these faults.

Comenius, typified this attitude:

"For all men alike have innate Principles of three kinds, matching the necessities of all kinds of action, knowing, willing and achieving. In every man there are innate the Norms of knowledge (which are called Common Notions) and the Stimuli of Desire (which we name Common Instincts) and the organs for doing everything, which it may be permissible to call Common Faculties." (Comenius, 1938, p.6)

The empirical tradition tended to emphasize nature as opposed to nurture. Bacon, for example, said, "A man's nature runs either to herb or weeds. Therefore let him seasonably water the one, and destroy the other." (Bacon, 1824, II, p.348)

The Empirical Approach

Yet Hobbes, 'the father of empirical psychology' had this to say:

"Nature hath made men so equal, in the faculties of the body, as that though there be found one man sometimes manifestly stronger in body, or of quicker mind than other; yet when all is reckoned together, the difference between man, and man is not so considerable, as that one man can thereupon claim to himself any benefit, to which another may not pretend as well as he." (Hobbes, 1881, p.63)

He considered that a greater equality amongst men can be found in mental faculties even than in strength. To

these faculties he excepts verbal pursuits such as science which he considered not a native faculty. As a proof of intellectual equality he stated

"There is not ordinarily a greater sign of the equal distribution of any-thing, than that every man is contented with his share." (Hobbes, 1881, p.63)

John Locke tried to thrash out the whole matter but was misunderstood in the process.

He said that children begin life as "white paper or wax to be moulded or fashioned as he pleases" (Locke, 1693, p.216) but that, on the other hand, "We must not hope wholly to change their original tempers, nor make the gay pensive and grave, nor the melancholy sportive, without spoiling them. God has stamped certain characters upon men's minds, which, like their shapes, may perhaps be a little mended, but can hardly to totally altered and transformed into the contrary." (Locke, 1693, p.66)

He advised those who are concerned with the education of children to study "their natures and aptitudes" in order to see what is the best line for them to take. Observing their native stock he should decide how it is to be improved "for in many cases, all that we can do, or should aim at, is to make the best of what nature has given." (Locke, 1893, p.66) Everyone's native talent should be fully extended but attempts to foster talent where it has not been endowed by nature are fore-doomed to failure. He estimated

that 'nine parts of ten' of human characteristics are the result of education. (Locke, 1693, p.1)

He was represented as being an extreme environmentalist, partly on the strength of his famous 'white paper, or wax' description of the young child, but mainly for his opposition to the theory of innate ideas.

In the Essay Locke attacked this notion. He proceeded by showing that there are no innate principles in the mind and that in the first place the argument of general assert is fallacious. To prove this he appealed to other cultures, to the minds of new born children and to mental defectives. Since all these are less touched by education than normal people then it follows that their innate ideas would be easier to observe. This is not so. Generally held ideas cannot be found. He went on to prove that no practical principles are innate, no moral rules, no idea of God, no ideas of whole and part.

This was interpreted, by Helvetius for example, as disbelief in the importance of heredity. It should be seen instead as an attempt to distinguish those innate characteristics which vary from one person to another from those which are common to mankind.

Another view of the individual developed within the observationalist tradition. There was always a tendency within this tradition to take an atomistic approach, that is to view man as the sum total of his parts. Hume stated the

position explicitly:

"I may venture to affirm of the rest of mankind, that they are nothing but a bundle or collection of different perceptions, which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement."

(Hume, 1911, I, p.239)

This view was held, to a greater or lesser degree, by the associationists. Since it takes its beginning from an essentially individualistic event, the random association of ideas, the associationist school of psychology was more interested in determining the consistencies of human behaviour than its variations. Since this attitude was shared by most psychologists in the eighteenth and nineteenth centuries, progress in individual psychology was slow.

Malebranche, the French priest-philosopher, made a contribution to the psychology of individual differences. In "Recherche de la Verite" he dealt with the imagination and in the second book he talked of human variations (Brett, 1953, p.377), the differences between men and women and people of different ages, and the differences brought about through prejudice. He showed how a prepossession can affect all the behaviour of an individual and quoted commentators as particularly bigoted persons. He then went on to make an analysis of the character of Montaigne which is an interesting contribution to individual psychology. (Malebranche, 1959) The Jansenist, Pascal,

described the attitude to human nature and individual differences held by the founders of the Little Schools:

"Man's nature is wholly natural, entirely animal."
(Pascal, 1961, p.126)

On the other hand natural principles are merely principles of habit which are passed on by the parents. Hunting in animals is quoted as an example. Some natural principles cannot be corrected by habit and these are "the result of innate tendency." (Pascal, 1961, p.119) This would seem to indicate that Pascal considered the basis of human personality as innate but that most observable behaviour is the result of habituation. We can only assume something to be hereditary when that characteristic proves incapable of modification.

He gave a picture of the method by which human differences arise through verbal learning.

"The heel of a slipper Ah, how well this is turned!'
'There's a skilful workman'. 'There's a brave soldier'.
From this arises our inclinations, and our choice of pursuits.
'That man's a drinker! The other drinks very little!' This
is what makes people sober or drunken, soldiers, cowards etc."
(Pascal, 1961, p.126)

This is one of the most subtle psychological descriptions of his time.

He continues by discussing the importance of custom.

"So great is the force of custom that out of those whom nature has made simply men, we make all condition of men". (Pascal, 1961, p.126)

But, strong as it is, custom cannot alter some natures which remain dominated by instinct. This would express the attitude of the Little Schools with their continual battle with man's animal nature.

The German School

The biggest contribution made to individual psychology, prior to Galton, was made by the German School. Leibniz suggested a psychology which allowed for a systematic study of the individual.

He suggested that the relationship between body and soul may be explained in terms of monads. The body is the appearance of an infinite collection of monads. Monads differ in the clearness of their perceptions and, the clearer the perception, the greater the activity. The dominant monad, the one with the clearest perceptions, the one which is active when the others are passive, is the soul.

"Body depends upon the mind in this sense, that the reason of what happens in the body is to be found in the mind." (Russell, 1949, p.144) The nearer perfect the soul is the more it dominates the body, the weaker its perceptions the more it is subject to the body. This can be explained in that the monad lives through perception and that perception in human beings cannot be perfect. Imperfect perception,

means imperfect activity and this is expressed in matter. Matter is therefore a mode of perception - it is the same world confusedly perceived. Life consists of the attempt to make perception less confused.

Monads differ according to appetite, their internal principle, and according to clearness of perception. Leibniz maintained that we are never without perceptions but are often without apperceptions when we do not have distinct perceptions. He pointed out the absolute necessity of unconscious mental states and suggested a graduation from the completely unconscious to the completely conscious. There is a level below which minute perceptions do not reach awareness but they may still influence the mind.

This kind of an explanation, which included the soul and made allowances for associationism, was the sort of compromise necessary for a psychology to function at this time. It provided the stimulus for Rousseau, for example, and, after him Pestalozzi and Froebel. Rousseau's view of child development was based on a recapitulation theory, that the child, in his development, lives over again the stages of development from savagery to civilization. The child's mind operates through sense-experience and will. His nature is not fixed at birth but depends on the total development of his mind and is made up of three stages. The first is characterized by feelings of pleasure and pain unrelated to the causes of the state. In the second stage the child is

capable of determinate feelings organized around sentiments of attraction and repulsion which are directly related to the immediate knowledge of objects affecting his own well being. By the third stage the child is capable of personal ideals by which the worth of the object is judged. The will is manifested in "dispositions to act" which are themselves determined by the environment and by the whole context of the mind.

Pestalozzi, too, based his psychology on Leibniz, both taken directly and through the medium of Rousseau. He saw individuality as built up through the accumulation of perceptions and considered that education should remove the differences induced by social discrepancies.

Green summed up Pestalozzi's principles in these words: "Development is spontaneous in its origin and in its continuance; it is in accordance with law, orderly and methodical; it depends on personal contact with reality, on concrete experiences; it is in a social milieu that the development of a social being with social instincts and a social destiny takes place; and when that development is perfect, it is free from all one-sided specialism, balance and harmony and power characterise it." (Green, 1913, p.118)

Froebel held similar views of the child. Education must follow the laws of development which are the general laws of nature, similar in kind to those which govern the growth of plants. Freedom is necessary for the child since

each one possesses his own particular growth pattern and only in conditions of freedom is this able to unfold naturally. The method by which this unfolding takes place is through play so that the main principle of education is continuous self-activity.

Through this activity the child will internalize his environment through sense-experience, will express himself creatively and will achieve unity with his social environment.

Froebel believed that each child possesses, innately, the capacity to realize the full human potential and that this potential is divinely implanted.

Modern evidence of innate variations in capacity has rather discredited the view that all children are equally capable of achieving everything that it is possible for mankind to achieve. It is interesting that Soviet education supports this view and that Soviet psychology is prepared, for example, to support a classification of mental deficiency which places emphasis on brain lesions and ignores genetic factors as a cause. (Peuzner, 1961,

It was Herbart, however, who developed Leibniz's ideas into a psychology of the individual. The monad became a 'presentation', the basic unit of the mind. Each new perception is either accepted into the consciousness as a presentation by the process of apperception or it sinks into the unconscious. The whole complex of presentations, the total apperceptive mass, constitutes the Ego. Presentations

have the power of grouping themselves into various combinations. This is done by processes called by Herbart opposition, complication and blending. The groupings that result are variously called 'circles of thought' and 'the apperceptive mass'. These circles of thought form the basis for individual differences in personality.

This theory provides a ready source of explanation for a wide range of behaviour. Attention can be explained as the activity of existing mental states or 'circles of thought'. The mathematician, for example, will have developed circles of thought concerned with mathematical symbols, he will be more aware of, or attentive to, new ideas of this kind. Pleasure and pain are brought about by the activity connected with the establishment of presentations. Desire is caused as presentations which are becoming established are opposed by existing presentations. For example, the presentation "food" might arise from the smell of food or the clatter of dishes and might be reinforced by feelings of hunger. The desire for food remains until the presentation can become perfectly clear by eating food. Desire might increase in strength if the initial presentations were opposed by another presentation, "complete work first", for instance. Permanent opposition of presentation can bring about long-lasting desires which are the basis of character. This is rather similar to a modern explanation of motivation in terms of the resolution of two opposing needs

e.g. the need for dominance and the need for submission.

Herbart's concept of the unconscious has much in common with the Freudian unconscious. He also seemed to have suggested a Freudian Id: 'individuality is continuously sending forth from its depth new fancies and desires' (Davidson, 1906, p.175) and an Ego, the total apperceptive mass, but, in his description of the development of individuality through the opposition, complication and blending of presentations, his direct descendant is Piaget.

More Recent Theories of Temperament

The Leibniz-Herbart tradition had ignored physiological explanations of individual differences. Such explanations had not died, however. The theory of temperaments, for one, was so firmly established that it has persisted to this day in the theories of Kretschmer and Sheldon. Cabanis gave an eighteenth century version of the notion of temperament. He suggested that the ancient idea of temperament, based on humours and modified by climate and age, needed modification if it was to be useful. The original idea of four types was an over-simplification. In reality, hardly anyone is encountered who is free from mixture and the balanced temperament which contains equal mixtures of all four is but an abstraction. Then again the division into four is quite arbitrary and it is possible that there are more than four types. The humours on which the

types are based may equally be questioned and one of them does not appear to exist except in abnormal cases. It is quite possible that the relative strength and direction of the different humours vary from one age to another. Besides the ancient theory takes no account of the fact that different organs play different roles in different people so that in one the muscular system may dominate and in others the cerebral or the nervous system. In fact, he says, it would seem that temperament is based chiefly on the degree of harmony existing between the different organs of the body.

"la difference de temperamens depend sur-tout de celle des centres de sensibilite, des rapports de force, ou de foiblesse, et des communications sympathiques de divers organes." (Cabanis, 1956, p.152).

Individual differences in temperament depend upon the kind of balance maintained between the different systems of the body and on the amount of exercise these systems receive. But temperament is also determined by habits developed by both the general sensibility of the body and by the sensibility of the particular organ. All behaviour is controlled by previous impressions whether external or internal and these impressions, in repeating themselves, render subsequent movements more easy. The number of times these impressions have been repeated and the length of time they have lasted also help to make reproduction more easy.

Frequent repetition of the same impression and its accompanying movement can cause the modification of both the way in which the organs act and even the underlying primitive disposition. In this way new or acquired temperaments may be formed.

Acquired temperaments can be looked at from two points of view, either as final characteristics of the individual, or as tendencies, developed slowly and successively from one generation to another and transmitted from father to son. This latter kind become in their turn natural temperaments. So we must discriminate between natural temperament which is innate and acquired temperaments which are formed in individuals by the long persistence of accidental impressions to which they are exposed.

The ideas expressed here in his theory of temperament show both his genetic approach which owed much to his contemporary, Lamarck, and his associationist approach which owed much to Locke and Condillac. They show an advance over previous uses of the theory since the Middle Ages but in complexity and comprehensiveness come nowhere near Galen.

Phrenology

Impatience with the slowness of progress in individual psychology may have been one of the motivating forces in the first system of applied psychology. This was the phrenological movement of which Boring said, 'It is

almost correct to say that scientific psychology was born of phrenology, out of wedlock with science." (Boring, 1929, p.55)

Gall, an anatomist, was particularly interested in the head and brain. An observation which he had made as a schoolboy that prominent eyes denote a good memory, is said to have been the stimulus which set him investigating the character of criminals and lunatics. In collaboration with Spurzheim he began to lecture on his new form of physiognomy and the materialist interpretation that he gave to his work caused its condemnation by the Church. Gall's own works, "Anatomie et physiologie systeme nerveux" (1810-19) and "Sur les fonctions du cerveau" (1822-25) were careful and conservative contributions to the study of the nervous system. To him character and intelligence were merely the sum of the combined functions of the organ of the brain. In the hands of Spurzheim, "more of a propagandist than a scientist", (Boring, 1929, p.50), Gall's careful observations were developed into the system of phrenology. Gall himself had been very doubtful about the possibility of character readings since he had only been able to isolate the "bumps" of men with very marked mental peculiarities.

Spurzheim, however, was not deterred by minor considerations such as empirical verification. He proceeded to drop all unpleasant faculties from Gall's list and to generally tidy up the system. Evil, according to him was

brought about by the mis-use of faculties which, otherwise were beneficial.

Following this, phrenology had a tremendous development, and was to last as a system for one hundred years. The Phrenological Journal was published under various guises from 1823 to 1911. Phrenology is based on four assumptions. The first is that the mind can be analysed into various faculties. The second is that specific faculties are located in specific areas of the brain, the third that the size of each area of the brain determines the relative strength of the faculty and the fourth that the configuration of the brain is observable in the outward shape of the skull. The first two of these assumptions are proving fruitful sources of investigation to psychologists today but the last two assumptions have not been verified.

In spite of these important errors and the number of extravagant claims that were made in its name by its enthusiastic followers, phrenology played an important part both in the psychology of individual differences and in education. It was the first practical applied psychology. In America, the Fowlers, for example, took phrenology to the people and character readings became a national pastime. One of the reasons for its tremendous popularity was its abandonment of the concept of original sin. Man is not born evil; he is born with his own individual set of potentialities and these can be developed by exercise. This final point,

which caused great emphasis to be laid on education, is an important one. The phrenologists, far from taking a determinist point of view, were emphatic that the innate equipment could be altered. When exercised, faculties are said to actually cause brain growth, "exercising faculties enlarge their organs so exercising the organ of the mind, the brain, causes it to enlarge and the skull grows to accommodate it." (Fowler, 1873, p.309ff) This would appear to be difficult to prove but Fowler states, "Facts by thousands are constantly transpiring in our lecture-room and professional practice, showing that exercising faculties enlarges their organs, while inaction diminishes." (Fowler, 1873, p.313).

The tremendous interest in phrenology showed the need for a practical science of the individual and phrenology anticipated many of the functions of modern individual psychology: intelligence and personality testing, vocational and educational guidance, counselling and therapy. The Associationists in England and the Positivists in France were in sympathy with Phrenology. Bain gave it credit for having emphasized the range of individual differences and for having initiated a method of classifying such differences. On the other hand he criticized it for its omissions, such as the vocal powers, and for contradictions, such as Combe's statement that "there appears to be a quality of brain which gives retentiveness to memory

so that one individual retains impressions much longer than another although their combination of organs be the same." (Combe, 1879, p.368)-

The Positivist, Comte, placed a great deal of credence in phrenology:

"Gall's cerebral theory has destroyed for ever the metaphysical fancies of the last century about the origin of Man's social tendencies, which are now proved to be inherent in his nature, and not the result of utilitarian considerations". (Comte, 1853, II, p.127).

Behaviourist Approaches

Associationism, with its concern for establishing general rules, made few direct references to individual differences. Yet there were some significant contributions. Mill made a beginning to the study of personality in his *Ethology*, but, at the same time, he reduced the sense of identity to memory, 'The life of one man is one series of ideas'. Condillac reduced the study of psychology to the concept of the solitary individual while Cabanis returned to the theory of temperament. He also evolved an idea of the central Ego which he identified with the brain, as the source of consciousness. He stressed the instinctive basis of behaviour and the way in which these instincts work independently of the central Ego. He began a developmental approach to psychology and described the importance of understanding the total development of the human being from

childhood to old-age and the effects of accidents and disease, since changes in the particular organs produce changes in the whole organism e.g. changes at puberty.

Bain placed great emphasis on the power of discrimination:

"Our intelligence is, therefore, absolutely limited by our power of discrimination." (Bain, 1889, p.15) We can, from the beginning, discriminate sights, sounds, tastes etc. and each person can do each of these more or less delicately "This is the deepest foundation of disparity of intellectual character, as well as of variety in likings and pursuits." (Bain, 1889, p.16) Again, when speaking of the power of retentiveness he says "Although some philosophers have taught that all minds are nearly equal in regard to facility of acquirement, a schoolmaster that would say so must be of the very rudest type. The inequality of different minds in imbibing lessons, under the very same circumstances, is a glaring fact; and it is one of the obstacles encountered in teaching numbers together, that is in classes. It is a difficulty that needs a great deal of practical tact or management, and it not met by any educational theory." (Bain, 1889, pp.21,22) This expresses Bain's position in a nutshell. He is aware of differences in capacity, he is interested in them and, elsewhere, he studies them. He feels, however, that it is something which cannot come under scientific study and that, therefore, it belongs to the art

of teaching rather than the science of education.

Previously Bain had studied the psychology of character and in the Preface he stated "There is nothing more certain, than that the discriminating knowledge of individual character is a primary condition of much of the social improvement that the present age is panting for." (Bain, 1851 Preface). As Bain pointed out "differences of quality that give rise to important intellectual distinctions ought to be taken into the account in judging of individuals." (Bain, 1861, p.188). He went on to speak of differences in intellect, particularly of superiority in intellect for which terms like 'clever', 'able', 'gifted' and 'intelligent' testify to the general recognition of the endowment. He also considered that Phrenology can only claim to be that part of the science of character which considers innate tendencies. It is necessary to "inquire into the history and the environment of the individual under consideration to see how much can be ascribed to circumstances and cultivation, before we put down all the appearances to the account of nature." (Bain, 1861, pp.189, 190).

Bain suggested that in addition to the local development of the brain, the quality of the substance must be taken into account. This will manifest itself in the amount and force of the spontaneous energy flowing from it through the nervous system. (Bain, 1861, pp.197,198)

Differences can also occur in the physiological basis of emotion, in the sensory basis of the intellect and in the general plasticity of the mind. This final quality is not described in physiological terms but the impression is left that Bain would have liked to have described all differences as primarily physiological although modified by experience in the formation of associations.

Comte's positive philosophy contained suggestions for the study of the individual

"The positive philosophy teaches us the invariable homogeneousness of the human mind, not only among various social ranks, but as regards individuals and it therefore shows us that no differences are possible but those of degree." (Comte, 1853, II, p.473). This suggested the possibility of scientific study of degrees of difference among individuals. In intellect, for example, motivation is the characteristic to be measured:

"However important individual differences in this respect may be, the differences are of degree only, so that the most eminent natures hold their place in the comparison and men may be classed, in a scientific sense, by the nobleness or increasing speciality of the affective faculties by which the intellectual incitement is produced." (Comte, 1853, II, p.129).

A Scientific Study of the Individual

The Positivist Movement was important for what it tried to do rather than what it succeeded in doing. It tried to treat the individual from a scientific stand-point and succeeded in helping to establish a climate in which such a scientific study could take place.

Galton was the "first who attempted in a thorough going way to apply the principles of variation, selection, and adaptation to the study of human individuals and races." (Murphy, 1959, p.117) In Hereditary Genius he demonstrated that individual talent cannot be explained in terms of the influence of the environment. As he said himself "I propose to show in this book that a man's natural abilities are derived by inheritance under exactly the same limitation as are the form of physical features of the whole organic world." He uses Darwinian terms and, in fact, Galton was a follower as well as a relative of Darwin, translating his theories into psychological research. Hereditary Genius appeared in 1869, ten years after the Origin of Species.

Galton's importance does not lie solely in the fact that he instituted a technique of measuring individual differences but that he was interested not in the general laws which govern the mind but in variations from individual to individual. Before his time psychologists tended to regard such variations as a nuisance, phenomena to be explained away rather than to be described. Even the science

of temperament which had interested man since Hippocrates was an attempt to explain away differences by assigning them to broad types. There has always been a wide-spread belief that men are fundamentally equal and that differences come about through environmental influences. This belief has appeared in many contrasting societies, the slave population of Rome, Early Christians, the Naturalists and Romanticists of the 17th, 18th and 19th Centuries, the Communists of the 20th - e.g. the Lysenko controversy. Galton emphatically opposed such a view.

"I have no patience with the hypothesis occasionally expressed, and often implied, especially in tales written to teach children to be good, that babies are born pretty much alike, and that the sole agencies in creating differences between boy and boy and man and man, are steady application and moral effort. It is in the most unqualified manner that I object to pretensions of natural equality." (Galton, 1869, p.14)

This is a point of view which has proved appropriate to the British social order which is a democracy derived by gradual steps from an aristocracy. Even to this day the educational system is firmly based on the concept of innate inequality so that the multilateral organisation of schools persists.

Galton was most concerned with biological factors since he was working under the influence of the "Origin of

Species". He did not, however, neglect the influence of environment and he made the first scientific attempt to separate the effects of nature and nurture with his "History of Twins".

"Twins have a special claim upon our attention; it is, that their history affords means of distinguishing between the effects of tendencies received at birth and those that were imposed by the special circumstances of their after lives." (Galton, 1883, p.217) He worked by questionnaire and accumulated anecdotes as evidence. He investigated two situations, very similar twins who became less similar with time and dissimilar twins who became more alike with time. The forces of environment which affected their original nature were listed. His results were inconclusive because he had not fully grasped the use of the experimental tool he had discovered. He was aware of the distinction between monozygotic and dizygotic twins but not of its implication and it was left to Thorndike to take up the technique where Galton left off.

'Inquiries into Human Faculty' also included a nature v nurture study using observation on animals which anticipated much later experiment. Galton carried out investigations into a great variety of human characteristics and behaviour and was particularly concerned to show individual differences in every activity. Among other subjects he studied, and always keeping in mind the variations occurring from one individual to another, were

word associations, memory, fatigue and sensitivity to sounds, touch, smell and muscular sensation. Galton's influence on psychology was immense. He ranged so wide that there are very few aspects which he did not touch and, wherever he touched, he left some impression.

Flugel says "If to Wundt, building on the foundation made by Fechner, belongs the honour of definitely establishing the reign of experiment in general psychology, to Galton falls the almost equal credit of pointing the way to an individual psychology on an experimental basis."

(Flugel, 1935, p.132) While Boring says simply "He founded individual psychology and thus the mental test." (Boring, 1929, p.478)

With Galton, modern individual psychology began. The individual was seen as a worthy subject for study and techniques for such study had been developed. The influence of Darwin caused the nineteenth century to end with a strong biological orientation. The psychology of Freud, McDougall and the Behaviourists were all based firmly on biology. The means had been developed, however, by which hypotheses could be exposed to vigorous examination and, one by one, such one-sided views of the nature of the individual had to be abandoned. The biological position was seen to be untenable as research into the glandular basis of personality, clinical research into the brain, and genetic studies all indicated that only partial explanations

along these lines could be given. Then, as anthropological evidence of social conditioning began to accumulate, the swing to a completely environmentalist point of view was made. By the mid-twentieth century, it had become possible to abandon such 'all-or-nothing' stand-points and to begin a study of the individual which saw him, at any particular moment of time, as the resultant of a number of forces, biological and environmental.

CHAPTER VI

THE PSYCHOLOGICAL DIMENSION

b) Practical Considerations

Measurement Based on Morphological Factors

The earliest attempts to measure individual differences were based on the outward appearance of the subject. In particular, facial characteristics were taken as an index of character. Homer depicted his characters through description of dominant facial characteristics. Hippocrates helped to develop this into the study of physiognomy and Pythagoras is said to have selected his pupils on the basis of their physiognomy. Aristotle had great faith in the importance of facial characteristics. (Aristotle, 1913) Describing noses he said, "Those with thick bulbous ends belong to persons who are insensitive and swinish - sharp tipped to the irascible, those easily provoked like dogs - rounded, large and obtuse noses to the magnanimous, the lion-like - slender, hooked noses to the eagle-like, the noble but grasping - the nose with a very light notch, to the impudent, the crow-like - white, snub noses to those of luxurious habit, like deer - open nostrils being a sign of passion." (Penry, 1952, p.36)

Interest in the measurement of personality through facial characteristics has persisted to the present day, both as formal observation and as systematic study. In

eighteenth century England, for instance, the practice of physiognomy was explicitly forbidden by law. Lavater, about the same time, published his 'Essays on Physiognomy', which contained hundreds of drawings of faces while Gall went on from observation of facial criteria to develop phrenology as a means of measuring individual differences. Even alongside modern psychology, an interest in physiognomy flourishes, as witness the publication of two recent books on this subject. (Penry, 1952 and Brophy, 1954)

Human morphology has been one of the areas in which individual differences have been measured. From the beginning there has been an attempt to relate differences in physique to differences in temperament. Hippocrates postulated two physical types, phthisic habitus and apoplecticus habitus, related to two corresponding temperament types. Criteria were described for the recognition of the body type e.g. the phthisic was described as having a long, thin body, dominated by the vertical dimension while the apoplectic type was said to be short, thick and dominated by the horizontal dimension. (Hippocrates, 1939)

Body type and temperament type remained associated throughout the Middle Ages although nothing was added to the method of measuring these types. In France, in the late eighteenth century, three body types were suggested and were associated with three basic types of human temperament. Halle, Rostan, and the phrenologists, Gall and Spurzheim

CLASSIFICATIONS OF CONSTITUTIONAL TYPES

Source	Nationality	1	2	3a	3	3b
Hippocrates (460-400 B.C.)	Greek	Habitus apoplectic (short, thick)			Habitus phthisicus (long, thin)	
Halle (1797)	French	Abdominal	Muscular	Thoracic		Nervous, cephalic
de Troisième (1821)	French	Abdominal		Thoracic		Cranial
Rostan (1828)	French	Digestive	Muscular	Respiratory		Cerebral
Walker (1852)	English	Nutritive beauty (Venus)	Locomotive beauty (Diana)			Mental beauty (Minerva)
Carus (1852)	German	Phlegmatic	Athletic	Asthenic		Cerebral
Wells (1869)	American	Vital	Motive		Mental	
di Giovanni (1877)	Italian	Third combination	Second combination (Plethoric)		First combination (Phthisic)	
Beneke (1878)	German	Rachitic	Carcinomatous		Scrofulous, phthisical	
" - Rokitsky (1878)	German	Hyperplastic	Normal		Hypoplastic	
Huter (1880)	German	Ernährungstypus	Krafttypus		Empfindungstypus	
Manouvrier (1902)	French	Brachyskeletal (Microskeletal)	Mesoskeletal		Macroskeletal	
Stratz (1904)	German	Xantodermic (Racial)	Leucodermic (Racial)		Melanodermic (Racial)	
Virenius (1904)	Russian	Connective	Muscular	Epithelial		Nervous
Sigaud (1908)	French	Digestive	Muscular	Respiratory		Cerebral
Bean (1912)	American	Hypo-onto-morph (Hypo-phylo-morph)	Meso-onto-morph (Meso-phylo-morph)		Hyper-onto-morph (Hyper-phylo-morph)	
Bryant and Goldthwait (1915)	American	Herbivorous	Mesoplastic (Normal)		Carnivorous	
Mills (1917)	American	Hypersthenic	Sthenic		Asthenic (Hyposthenic)	
Brugsch (1916)	German	Wide chested	Normal chested		Narrow chested (Asthmatic)	
Viola (1919)	Italian	Megalosplanchnic (Macrosplanchnic)	Normosplanchnic		Microsplanchnic	
Davenport (1923)	American	Fleshy biotype	Medium biotype		Slender biotype	
Stockard (1923)	American	Lateral	Intermediate (Normal)		Linear	
Aschner (1924)	German	Broad	Normal		Slender	
Bauer, J. (1924)	Austrian	Hypersthenic habitus (Arthritic habitus)	Sthenic habitus		Asthenic habitus	
Draper (1925)	American	Gallbladder			Ulcer	
Kretschmer (1925)	German	Pyknic	Athletic		Leptosoma (Asthenic)	
MacAuliffe (1925)	French	Round			Flat	
Weidenreich (1926)	German	Eurysome			Leptosoma	
Pende (1927)	Italian	Hypervegetative			Hypovegetative	

Figure No 3. (Sheldon W.H., 1940, p. 22).

were some who classified individuals according to body type. Different terminology has been employed at different times and this has been summarized by Sheldon (see Figure No.3) . Usually three main types were described although some, like Hippocrates and several more contemporary investigators, have postulated two, while others, like Mostan, needed four. Three temperament types gradually emerged in association with the three physical types. One type, characterized by love of ease and pleasure was associated with the visceral area. It was recognizable by accumulation of fatty tissue and became known as the Vital or Nutritive Temperament. The second, the Motive or Active Temperament, was characterized by physical energy, liveliness, aggressiveness and was to be recognized by development of muscle. The third type, the Mental Temperament, was characterized by mental energy and by intelligence, and was recognized by length of limbs and development of cranium.

With increasing interest in measurement, many attempts were made to establish relationships between precise body dimensions and psychological characteristics. A new study called anthropometry developed with the work of Benecke, a contemporary of Herbart, who went to physiology for his explanation of psychology. The Italian anthropologists, de Grovanni and Viola began to classify the very large number of measurements they made and delineated three types, microsplanchnic, normosplanchnic and macrosplanchnic.

Correlation studies were made, by numerous investigators, between various physical measurements and the new mental tests. The usual results showed a low positive correlation (e.g. Sheldon W.H. 1927)

Another approach to the same problem was made by the psychiatrist Kretschmer. He classified body build in four types: pyknic, athletic, leptosome and dysplastic. He claimed that a relationship existed between these body types and two temperament types, cycloid and schizoid. The cycloid type show characteristics which, in an extreme form, would be classified as manic-depressive and the schizoid type shows characteristics of the schizophrenic order. These two abnormal type descriptions were extended to normal individuals under the terms, cyclothyme and schizothyme. Kretschmer claimed that schizophrenics were largely of the leptosome type while manic-depressives were most frequently pyknic and many investigations appeared to substantiate this claim.(e.g. Kretschmer, 1925, Westphal, 1931) It was demonstrated, however, that when the factor of age was eliminated the positive correlation disappeared. (Garvey, 1933) A later study (Burchhard, 1936) showed that, although the relationship reported by Kretschmer existed, there was a considerable amount of overlap and the age factor could account for much of the positive relationship . Studies of body types of college students, where this age factor was controlled, showed zero correlations between physical indices and psychological tests. (Klineberg, Asch, and Block, 1934)

Phrenology was the most systematic attempt to measure individual differences. It had much in common with physiognomy and morphology but became more widely used than either of them.

Let us take as an example the phrenologists' treatment of "the intellectual lobe (which) occupies the forehead, that part generally uncovered by hair. It rests on the sub-orbiter plate, or that elevation in the base of the skull under which the eyes are placed." (Fowler, 1873, p.975ff) Instructions are given on how to measure this lobe. Its function is described in terms of size:

- large----- those possessing it have natural greatness of intellectual judgment.
- full----- those possessing it have good intellectual capabilities.
- average----- those possessing it evince fair mental power provided they are cultivated, otherwise only moderate.
- moderate----- those possessing it are rather deficient in judgment.
- small----- those possessing it are decidedly deficient in mind and slow and dull of comprehension, lack sense.

In order to cultivate this faculty;

"exercise the whole mind in deversified studies and intellectual exercises."

In order to restrain this faculty

"Divert the flow of blood to the brain to the body by vigorous exercise, hot baths and abstinence from intellectual exercise."

Although the basic premises of the phrenologists, the configuration of the skull indicates the shape of brain and the shape of the brain indicates the function of the brain, were unsound, the approach was so thorough and was so widely accepted that it had a considerable effect upon orthodox psychology. In more recent times there have been many correlation studies which have indicated a low positive correlation between size of head and intelligence. Other studies which have attempted to establish a relationship between shape of head and intelligence have failed. The only firm relationship seems to be a low positive correlation (about .2) between general body size and intelligence (Husen, 1951) and this would explain the previously mentioned correlation between head-size and intelligence.

Attempts to measure individual differences of the psychological kind through individual differences of the physical kind are not finished. Sheldon's work along these lines and the factor analysts' approach are both more recent attempts at measurement based on morphological factors.

Methods based on Observation

The main interest in character study has always been directed towards children. Adults could be judged by their previous conduct but children were less predictable. Parents and teachers in particular have always been intrigued by the enigma of children's future performance and various suggestions about the ways in which children could be observed in order to find out this performance have been made.

Quintilian suggested that it was the duty of the teacher to discover 'the ability and natural disposition' of the children entrusted to his care. Two ways in which the teacher can estimate the child's ability are, firstly, by considering the effectiveness of his memory and, secondly, by considering his power of imitation.

Galen was cautious about making superficial judgments and gave warning against any attempts to judge the temperament of individuals by single, external factors, for example shape of nose, or hairiness of legs, since such details are clues only to the temperament of that particular part of the body. His main contribution to the measurement of individual differences was in his thorough description of the normal type, the 'temperate character' and the other broad temperament types.

Throughout the Middle Ages no practical attempts to measure individual differences appeared. With an

increased need for psychological measurement. Renaissance educators, Vitterino for instance, discussed the kinds of intelligence best suited for different kinds of learning. Alberti stated that the good father must be aware of his son's innate capacities and temperament, not expecting more than he can perform but forcing him to use to the full the whole of his natural ability. (Castle, 1958, p.52) Great faith was placed still in classification according to temperament but the use of more objective criteria may be increasingly noted.

Erasmus, for example, suggested that the teacher obtain guidance from Aristotle's work on physiognomy and that he use his own observation of the 'face and bearing of the child'. (Erasmus, 1904, p.196) Elyot described the work of the teacher as, "Firste to know the nature of his pupil, that is to say, whereto he is most inclined or disposed, and in what thyng he setteth his most delectation or appetite." (Elyot, 1907, p.24)

Vives was, perhaps, the first to try and classify intellectual differences according to differences in intellectual behaviour rather than external signs. He suggested the need for 'psychological inquiry' (Vives, 1913, p.73) and for conferences of teachers about the 'natures of their pupils'. (Vives, 1913, p.62) The signs of a child's ability are, in the first place, memory and, in the second place, play, which reveals their sharpness and their

characters especially among those of their own age and who are like them where nothing is feigned but everything natural." (Vives, 1913, p.82) the natural powers of the mind must be understood by the teacher. These powers are sharpness in observing, capacity for comprehending and power in comparing and judging. Vives compared the characteristics of the mind in detail with those of the eye and ended, "Just so it is with natural ability of the mind. For some minds are acute and see separate things clearly but cannot retain them when they are connected; their comprehension is narrow or their memory is short and fleeting. Others grasp but do not reflect on these things which are intuited, so as to determine their nature and properties." (Vives, 1913, p.74)

Huarte suggested national intelligence testing. In his dedication to King Philip he says,

"There should be friers appointed by the state, men of approved sagacity and knowledge to search and sound the abilities of youth, and after due search, to oblige them to the study of that science their heads leaned most to, instead of abandoning them to their own choice." (Huarte, 1575 quoted in Roback, 1962, p.26)

Aschan went back to Plato in suggesting, "Seven plain notes to choose a good witte in a child for learning." (Aschan, 1876, p.36) He described these indications of intelligence in some detail. They are: the will to learn with

an adequate constitution to make success in learning possible, a good memory, a love of learning, a capacity to take pains and a willingness to learn from others, a boldness in asking questions and a need for praise. (Ascham, 1670, pp.38-43)

Mulcaster laid great emphasis on child study:

"Parentes and maesters ought to examine the natural abilities in their children, whereby they become either fit or unfit to this or that kinde of life."

(Mulcaster, 1887, p.25) He suggested that children should be studied to discern the best time for each one to learn.

"The rule, therefore, must be given according to the strength of their bodies, and the quickness of their wittes joyntly". (Mulcaster, 1887, p.14) He refused to state precise ages. "At what yeares I cannot say, because ripeness in children is not tyed to one time, no more than all corne is ripe for one reaping, though most what about one." (Mulcaster, 1887, p.18) This is a clear statement of the principle of readiness, taking into account mental and physical factors and keeping it at the individual level rather than generalizing into types or age levels. It was Sir Henry Motton who went beyond vague generalizations and gave a systematic list of criteria to be studied. As summarized by Barnard these are:

A. Stamp of Nature:

1. colour or complexion,
2. structure or conformation of limbs,

3. the resultant of these two - countenance,
- B. Mental rather than physical characteristics:
 1. temperament, mixture of humours, (Wotton gives examples of these)
 2. stature, shape of head, type of eyes as indications of intelligence, (Wotton emphasized that the total resultant rather than separate indications are necessary for accurate knowledge)
- C. Miscellaneous indications which are often useful:
 1. Children have as much wit as they have memory, (He ascribed this to Quintilian)
 2. the manner in which a child plays,
 3. the child's dreams,
 4. the child's responses including smiles and frowns
- D. The child's inclinations:
 1. if the child is unduly silent,
 2. if the child is over precocious in anything,
 3. if the child sits still or is unoccupied too long. (Barnard, 1876, II, p.123)

Methodology becomes important

Wotton's systematic approach illustrates the return to methodical observation. Bacon did more than any

other to suggest the way in which observation was to be organized. The aim is:

"to procure good informations of particulars touching persons, their natures, their desires and ends, their customs and fashions, their helps and advantages, and whereby they chiefly stand; so again their weaknesses and disadvantages." (Bacon, 1905, p.155) He suggested methods of obtaining information for "although the knowledge itself falleth not under precept, because it is of individuals, yet the instructions for the obtaining of it may." (Bacon 1905, p.156) These methods include observation of expressions, words and deeds. These should be random rather than purposeful. The perusal of reports at second-hand are useful but, more important are investigations of the natures and ends of men:

"the weakest sort of men are best interpreted by their natures and the wisest by their ends." (Bacon, 1905, p.157)

He stressed the necessity of the teacher making an assessment of individual capabilities:

"We cannot fit a garment, except we first take measure of the body. So then the first article of this knowledge is to set down sound and true descriptions of the several characters and tempers of men's natures and dispositions, especially having regard to those differences which are most radical in being the fountains and causes of the rest, or most frequent in concurrence or commixture".

(Bacon, 1905, p.143)

He goes on to describe differences to be discovered from Astrology, History and Poetry and "those impressions of nature, which are imposed upon the mind by the sex, by the age, by the region, by health and sickness, by beauty and deformity, and the like, which are inherent and not extern and again those that are caused by extern fortune; as sovereignty, nobility, obscure birth, riches, want, magistracy, privateness, prosperity, adversity, constant fortune, variable fortune, rising per saltum, per gradus, and the like." (Bacon, 1905, p.163)

The new practical approach was illustrated by the Jesuits, who kept cumulative records of their pupils as a source of information on individual differences. These records were expected to contain personal details and progress marks as well as observations of character and capacity. Barbier advised Jesuit teachers:

"You have everything to observe, the individual character of each boy and the general tendencies and feelings of the whole body." (Barbier, 1907, p.61)

Montaigne also advised teachers to study the capacity of their pupils before setting them to work:

"It is therefore meet, that he make him first trot-on before him whereby he may the better judge of his pace." (Montaigne, 1892, I, p.153) Malebranche, a century later, used Montaigne as the subject of an interesting character study.

Little advance over the Jesuit system was made by educators in child study for a long time. Rousseau's approach, for example, is less important to the methodology of child study than is his insistence that social factors should be separated from 'natural' or biological ones. He drew up a list of individual characteristics including, alongside such 'fundamental human characters' as sex and age, idiosyncracies of disposition and ability and differences of social condition. The only way to understand those differences among men, which are made manifest in the inequalities of social life is to know man's nature. To do this it is necessary to cut away the overlying layers laid down by accident and progress and to confront man 'as nature has made him'. (Rousseau, 1913,p.168)

Herbart insisted that the educator must study the child's capabilities before beginning education and he suggested some ways in which this can be done. At the basis of child study is observation. The teacher must first observe the child's group of presentations, his lines of interest. He must, secondly, study the child's physical organisation or "disposition" which includes his temperament. Thirdly, the teacher must watch the child at play to see whether he is interested in a variety of objects or persists with a few. Then the teacher must observe the child's memory span, the accuracy of his reproduction and the spontaneity of his expression particularly during play. In

Grades of natural ability separated by equal intervals		Proportionate viz one in	In each million of the same age	Nos. of men comprised in the several grades of natural ability, which in respect to their general power or to special aptitudes.					
Below Average	Above Average			In the total male population of the U.K. viz 15 million of the undermentioned ages:-					
				20-30	30-40	40-50	50-60	60-70	70-80
a	A	4	256,791	651,000	495,000	391,000	268,000	171,000	77,000
b	B	6	162,279	409,000	312,000	246,000	168,000	107,000	48,000
c	C	16	63,563	161,000	123,000	97,000	66,000	47,000	19,000
d	D	64	15,696	39,800	30,300	23,900	16,400	10,400	4,700
e	E	413	2,423	6,100	4,700	3,700	2,520	1,600	729
f	F	4,300	4,300	333	590	355	243	155	70
g	G	79,000	14	35	27	21	15	9	4
x	x	1,000,000	1	3	2	2	2	-	-
all grades below g	all grades below G								

On either side of average	4,500,000	1,268,000	964,000	761,000	521,000	332,000	149,000
Total both sides	1,000,000	2,536,000	1,928,000	1,522,000	1,042,000	664,000	298,000

Figure No. 4. Classification of Men According to Their Natural Gifts.

(Galton, 1869, p. 49).

the fifth place, the quality of the child's speech should be studied including his "rhythm of mental movement" and character of "store of thought".(Herbart, 1816, p.220) If we make a comparison of these lines of study with modern child study we find that Herbart has included:

- 1) the child's interests and attitudes and perhaps his achievement.
- 2) his personality traits.
- 3) his ability to persevere.
- 4) } his intelligence.
- 5) }

This appears to be a comprehensive list for 1835.

Method based on Measurement

Modern methods of psychological measurement date from Galton. The idea of using mathematical methods of expressing psychological relationship was not new. Herbart, for instance, had been a recent advocate. It was Galton, however, who applied mathematics successfully to individual differences. In 'Hereditary Genius' he was concerned with demonstrating that individual talent cannot be explained in terms of the influence of environment. He argued that reputation is a reliable measure of genius and that Quetelet's adaptation of Gauss's normal law of error to anthropometric data could also be applied to mental characteristics. (Galton, 1869, p.49) The first of these assumptions has doubtful validity but the second has become the basis of mental

measurement. Galton proceeded to investigate a wide range of individual variations. He tried out his statistical techniques on nature v nurture studies, word association, memory and fatigue and sensitivity to sounds, touch and smell. He was interested, within these studies, to demonstrate the range of variation rather than to establish general laws. He developed the correlation technique so that he could demonstrate, meaningfully, the relationship between two variables.

One important investigation he carried out was into mental imagery. As in 'Hereditary Genius' he used the questionnaire technique, asking his subjects to visualize their breakfast table and to record the images registered on their 'mind's eye'. He recorded two results: "the proved facility of obtaining statistical insight into the processes of other person's minds, whatever a prior objection may have been made as to its possibility; and the other is that scientific men, as a class, have feeble powers of visual representation." (Galton, 1883, p.87) He went on to investigate number forms and colour associations and demonstrated the range of individual differences to be found in these mental operations. Although his investigations were not sufficiently systematized to be put to practical psychological use, he started so many interesting lines of investigation and introduced so many useful techniques that modern individual psychology may be said to have begun with him. Among the 'first's that may be attributed to Galton

are twin-studies, the use of questionnaire in psychology, free association, the normal curve and the concept of correlation.

Galton's method of indicating the degree of relationship between two variables was graphical. It remained for his pupil, Pearson, to develop the correlation coefficient which states the degree of relationship in a scale from +1 to -1. This technique was arrived at by the application of Gauss's "theory of least squares" by taking the product of the two deviations and adding them algebraically.

Cattell, another student of Galton is said to have 'defined on a large scale the place of quantitative studies of individual difference in the new psychology'. (Murphy, 1959, p.353) He measured individual differences in intellectual, sensory and motor tasks (Cattell, 1890, pp.273-380), and carried out studies of the physical and mental measurement of students. (Farrand 1896, p.618-648)

Cattell's tests were taken directly from the psychophysical laboratories and included such activities as dynamometer pressure, reaction time, memory for letters and judgement of time. An estimate of the progress which had been made along these lines was made at the end of the century. (Sharp, 1899) American psychologists, he said, have been busy in the field of Individual Psychology but "there has been no unity of method among the investigators,

nor have the results been systematized or their value estimated". Jastrow retorted that he was not discouraged by the lack of success and suggested the lines of future research. (Jastrow, 1901) The starting point should be an analysis of elementary processes, the second step the devising of tests to measure these, the third the use of norms in a) correlation studies b) genetic studies and c) individual studies. Although he anticipated in a striking way the development of statistical procedures in testing, particularly group testing, he was over-optimistic in his faith in psycho-physical methods. Wissler, in making the first correlation study of mental measurement, showed that correlations between tests and academic success were little better than zero (-0.02 to $+0.16$) while the student's marks in various class exams correlated together quite highly ($+0.11$ to $+0.75$). (Wissler, 1901, p.62)

American psychologists were not unaware of Binet's work in France. Alfred Binet (1877-1911) the editor of "L'Annee Psychologique" was a prolific writer and reviews of his work appeared regularly in American Journals. In 1895 in collaboration with Henri he published "La Psychologie Individuelle". They defined their scope in this way:

"Individual psychology, as its name indicates, aims at the study of different human psychical processes; in this study attention must be directed on individual differences in these processes; general psychology studies general properties

of psychical processes those which are common to all individuals; individual psychology, on the contrary, studies those properties of psychical processes which vary from one individual to another; it must determine these variable properties and then study to what extent and in what manner they vary from one individual to another". (Binet and Henri, 1890, p.411)

They suggested that it was unnecessary to know to what degree A and B are distinguished from each other in tactual sensibility and colour discrimination but that it was necessary to know their relative powers of imagination, memory, observation and reasoning. (Binet and Henri, 1896, p.426) They proposed the study of ten processes, memory, nature of mental images, imagination, attention, comprehension, suggestibility, aesthetic sense, moral sense, persistence and motor skill. (Binet and Henri, 1896, p.435)

The general conditions of mental testing were also laid down in this article. Tests should be 1) of wide variety to embrace the greatest number of psychological faculties 2) should test the higher faculties 3) should not exceed in time one and a half hours for fear of fatigue 4) should be varied for the same reason 5) should be appropriate to the subject's environment and 6) should not necessitate complicated apparatus. (Binet and Henri, 1896, p.465) When Binet was asked in 1904 to join a commission on the selection of children for special schools he was in

a position to develop his proposed test and in collaboration with Simon he produced the first practical intelligence test. They claimed that the confusion associated with the classification of defectives came, not from the absence of uniform nomenclature as was generally believed, but from faulty examination. (Binet and Simon, 1905) The stated aim of the tests was: "when a child is brought to us, to be able to measure his intellectual capacities, so as to know if he is normal or retarded". (Binet and Simon, 1905b, p.191) In the same journal they set out to show that a norm of intelligence could be established so that it would be possible to measure a child and see by how many years that child was retarded in his intellectual development. It was explained that strictly speaking intelligence cannot be measured but that in knowing the standard of normality it is possible to determine the relative position of an individual compared with others. Current tests were criticized as invalid since they were never tried out in the schools. The first revision of these tests was carried out in 1908. Tests were re-arranged in order of difficulty since the previous order had been found faulty. More important was the re-arrangement of the tests into age levels determined as the age at which the "majority of children succeed in them". (Binet and Simon, 1908, p.1) From this arrangement arose the device of "mental age". Binet avoided tests which measured psycho-physical characteristics and also avoided tests which were too influenced by instruction since

he wished to measure the level of "natural intelligence".

The Binet tests were translated into English by Goddard in 1910 and were revised by Binet in 1911 before his death. In the following year Stern suggested the use of the Intelligence Quotient as being more meaningful than Mental Age and demonstrated for the first time that controversial phenomenon, "the constancy of the I.Q." (Stern, 1912 and 1416) A note of caution was sounded by Kirkpatrick in 1912 who said "I do not believe that the Binet Tests or any other tests likely to be devised within the century will serve as a reliable measure"(Kirkpatrick, 1912, p.337), but in general the tests were accepted as being valid and reliable measures of an enduring and genetically determined human characteristic.

Thus it was that, at the end of the first decade of the present century, the measurement of individual differences had come of age. The Binet Test had been established in more or less its present form and was to become the yard-stick against which all tests of capacity were to be eventually measured.

CHAPTER VII

THE EDUCATIONAL DIMENSION

Theoretical Considerations

How far is education consistent with individuality? Education is part of that process of socialization which makes the un-social baby into a mature member of society. It must largely concern itself with stressing the common elements of the culture into which the child has been born, with emphasizing the socially acceptable aspects of his temperament and with modifying the unacceptable ones. Education, viewed this way, tends therefore, to reduce individuality and emphasize conformity. Any consideration of the theoretical aspects of this educational dimension must be concerned therefore with the educational dilemma which, according to Monroe, has vexed thinkers since the beginning of civilization, "How is the individual to be educated so as to secure the full development of personality and at the same time preserve the stability of institutional life and assist in the evolution to a higher state?" (Monroe, 1905, p.754)

The Concept of Innate Ideas

In pre-civilized society education was concerned with passing on both the mechanics of daily living and the oral traditions of the tribe. Banishment was the likely response to the aberrant individual. When formal education

emerged in the early civilizations it was so limited in scope that individuality could only be enjoyed by the privileged few. When in Ancient Greece individuality was to emerge on a large scale it was linked with education and the education of the Sophists was to threaten the stability of institutional life in the way Monroe was later to describe it. By stressing the relativity of experience and the importance of individual opinion they awakened, in a society in which foreign travel had already bred discontent, an anti-social individualism which bordered on anarchy.

Socrates tried to reconcile the individual to society by demonstrating that man was finally responsible not to himself alone but to eternal, universal truths. By setting the objectives of education outside the immediate social setting Socrates liberated the individual from traditional education. He shifted the educational target from social conformity to reliance upon individual reason. In doing this he suggested the notion of innate ideas, eternal, universal truths possessed innately by every individual. This notion was to be taken up by Plato and to form the basis for a school of thought about the individual and his education which was to persist to this day.

Subjective and Objective Traditions of Education

Compayre has described two traditions in education, the 'subjective' and the 'objective'. (Compayre, 1901, p.191)

The subjective pedagogy aims to develop inner qualities and it is opposed to objective education which aims at accumulation of knowledge. Actually the division between the two traditions is deeper and wider than this and represents two fundamentally opposing views on life. The subjective view sees man as essentially good and education as a 'leading out', a development of his inner potentialities. The objective view sees man as possessing innately both good and bad qualities or, alternatively possessing no qualities, a 'tabula rasa'. Education is seen, in this tradition, as suppressing undesirable qualities and stressing desirable qualities, 'putting in' as opposed to 'leading out'. The subjective tradition emphasizes individuality but minimizes, even denies individual differences while the objective tradition tends to favour a determinist position and suggest either that hereditary differences are all important or that man is completely determined by his environment.

Plato and Selective Education

Plato established the rubrics of the subjective tradition. He elaborated the notion of innate ideas and explained individual differences as due to differences in form. Like Socrates he was concerned with correcting the trend in Greek society towards unbridled individualism. He saw that education was an agent of society and his study of Spartan education indicated to him just how successful an

agent it could be in the hands of a totalitarian power. While having no desire to ape Sparta he could see how such an education could produce an efficient state. His system of education was designed to introduce the advantages of Spartan education while retaining some degree of individuality. Individual differences were to be channelled into three streams and each stream was to receive an appropriate education. Development of the individual could be fostered within these educational divisions and selection of citizens for each division was to be on the basis of ability and not privilege. It almost seems as if, in 'The Republic', Plato might have been writing a Government Report for British Education.

Aristotle, while not as interested in the social aspects as Plato, was also concerned with showing that education could contribute towards the State rather than endanger it. He saw individual differences as being the result of variations in matter, rather than form and, since he did not subscribe to the theory of innate ideas, was able to consider the possibility of congenital deficiencies. This approach which both allowed for hereditary differences between individuals and saw the possibility of developing individuality through education, is the basis of the objective tradition of education.

"Intellectual goodness is both produced and increased mainly by teaching and therefore experience and

time are required for it. Goodness of character on the other hand is the outcome of habit...From this it is evident that no form of goodness of character is produced in us by nature; nothing which is by nature can be habituated to be other than it is...Goodness then is not produced in us either by nature or in opposition to nature, we are naturally capable of receiving it and we attain our full development by habituation." (Burnett, 1913, p.44)

Individual Education in Rome

A compromise position was reached by the Roman Lucretius. He believed in hereditary differences and considered that education could do little to modify this original constitution. While these individual differences have to be recognized and taken into consideration, "What is food to one, is to others biting poison", (Lucretius, 1947, p.395) they are trivial compared with the power of reason. This power, if it cannot expel original nature, can yet govern it and enable man to choose the good rather than a lesser alternative.

"One thing herein I see that I can affirm that so small are the traces of these natures left which reason could not dispel for us, nothing hinders us from living a life worthy of the gods." (Lucretius, 1947, p.318)

This is a compromise because it assumes that each individual possesses innately sufficient reasoning power to overcome inherited deficiencies. It was the

compromise to be adopted by the Early Christians although, for the Reason they substituted the Will. An approach more directly in the objective tradition was taken up by Quintilian. He believed that education should follow the natural bent of the pupil since careful training of this bent increases the mental strength of the pupil while neglect "enfeebles those gifts for the exercise of which he seems to have been borne". (Quintilian, 1938, p.102) He believed that, not only should the individual's natural gift be fostered, which is similar to subjective beliefs, but that which is lacking should be supplied. Quintilian's matter-of-fact approach towards individual education was to have a tremendous effect when his works were rediscovered in the fifteenth century.

The Spiritual Individual

With Christianity individuality became established as a spiritual rather than a temporal value. Every person was an individual, not as a result of being different in bodily form; but as a result of the possession of a unique soul. No incompatibility was seen between education and individuality since each operated in a different plane. Temporal differences between individuals were considered to be innate, the result of original sin, and they were thought to hinder the progress of the soul towards salvation. Education was aimed at salvation and was, therefore, aimed at eliminating individual differences. To the early

Christians it was not education but individual differences which were incompatible with individuality.

Christianity from the beginning laid emphasis on equality before God. The Platonic notion of innate ideas fitted this Christian orientation and it was not long before it was extended to include intellectual equality as well as spiritual. The early Christian view of man was essentially optimistic but St. Paul began to emphasize man's sinfulness, 'For there is no distinction, for all have sinned, and fall short of the glory of God'. (Paul, Rom.3, 22 and 23) Christian education began to emphasize discipline and submission to authority and St. Paul stressed the importance of submission. St. Clement listed eleven kinds of reproof, pointing out that different types of reproof best suited different children. Origen is described as having stimulated his pupils by disputation, 'until with a strange kind of persuasiveness he reduced us to a State of quietude'. (Hodgson, 1906, p.212)

From belief in equality of spiritual endowment to belief in equality of intellectual endowment was not a very big step. It was taken by Felix Minucius:

"Let him know that all men are begotten alike, with a capacity and ability of reasoning and feeling, without preference of age, sex or dignity: nor do they obtain wisdom by fortune but have it implanted by nature... Whence it appears that intelligence is not given to wealth, nor is

gotten by study, but is begotten with the very formation of the mind." (Hodgson, 1906, p.284) Original sin was believed to account for individual differences in ability to learn. This doctrine of intellectual egalitarianism was often challenged but it persisted as a motivating force in Christian education in the assumption that all children could learn equally well if only they would make the effort. Lack of effort was equated with lack of will. St. Cyril in the Fourth Century said: "The Lord in enlisting souls examines their purpose and if any has a secret hypocrisy he rejects the man as unfit for his service but if he finds one worthy to him he readily gives His grace." (Hodgson, 1906, pp.173-174)

With the development of the doctrine of grace, the case against individuality in education was strengthened further. St. Augustine saw that if the will was to be taken as the most important part of the psyche then the possibility of innate differences in willing cannot be overlooked. The doctrine of grace took care of this by providing for innate deficiencies in willing. Augustine accepted human nature as being essentially evil for, since man cannot achieve salvation without God's help, man is of his nature damned. God's help comes in the form of grace which is bestowed initially in Baptism and throughout life by prayer and the Sacraments. All men receive a sufficiency of grace for salvation if they are prepared to

avail themselves of it. Since human nature is essentially evil then it must be controlled by discipline and discipline must be achieved largely through punishment:

"All this goes to show that free curiosity is of more value in learning than harsh discipline. But by Your Ordinance, O God, discipline must control the free play of curiosity. For your ordinance ranges from the master's cane to the torments suffered by the martyrs, and works that mingling of bitter with sweet which brings us back to you from the poison of pleasure that first drew us away from you." (Augustine, 1945, p.14) Augustine suggests that knowledge is obtained through submission to authority so that he that would learn becomes fit to learn. Having achieved fitness to learn through submission the individual, with the help of his teacher, is able to achieve that recollection of innate knowledge which constitutes learning. By merging himself with these innate universal ideas the individual becomes an educated man, 'a person capable of forming a consistent unity out of all art and knowledge'. (Ulich, 1950, p.83)

The Disappearance of the Individual

Throughout the Middle Ages this Neo-Platonic view of individuality prevailed. Seeing general and universal principles as pre-eminent and individual differences as the result of sin, educational methods could not help but aim at reducing human variability. Occasionally a voice was

raised in protest against the submergence of the individual. Abelard was one such voice. He championed individuality both in his teaching and in his personal life. John of Salisbury, by showing that natural ability could be developed, re-emphasized the importance of education. Even here, however, we find that the will is seen as the main deciding factor between success and failure:

"If examples were adduced, it would everywhere be apparent that, even where nature is sluggish, it is not unreasonable to apply oneself, and that even though natural endowment might have been more effective in a given case, diligence is not futile as though it were wasted. Although frequently nature is a dominant factor, and has greater proclivity in one or in another person, still, just as natural ability easily deteriorates when neglected, so it is strengthened by cultivation and care." (John of Salisbury, 1955, p.30)

The re-introduction of Aristotle into scholastic thought brought a renewed interest in phenomena, a new appreciation of the particular and gave the objective school of education another chance. Aquinas worked the 'new' thinking into the Scholastic corpus, making matter rather than form the individuating factor.

He disposed of the arguments, commonly held and completely opposed, that education, on the one hand, is imposed completely from outside and, on the other that, all knowledge

and virtuous habits are innate and that education merely rubs away the rust which covers the shine on the metal. Instead he proposed the Aristotlean way; that the child is born with the potential for knowledge and virtue and that education serves to cultivate these potentialities which are like seeds. The teacher works by expounding his own processes of reasoning by signs, "which serve as instruments for the natural reasoning of the student to arrive at conclusions previously unknown." (Aquinas, 1951, pp.377,378)

Renaissance of the Individual

A new interest in the individual arose as the Middle Ages came to an end and, with it, a new interest in the education of the individual. John Gerson took his lead from the New Testament and in his treatise "On leading children to Christ" he goes back to Christ for instruction on the management of children, pointing out that He had said, "Suffer little children to come unto me." We need to yield up our dignity, says Gerson, and to become like little children ourselves.

"Where there is no love what good is instruction, as one neither likes to listen to it nor properly believes in the words heard." (Ulich, 1947, pp.181-190) About this time, too, Quintilian's 'De Institutione Oratoria' was rediscovered and all the Roman's careful advice on the means of catering for individual differences was available for

teachers.

The Renaissance in Italy modelled itself on Classical Greece and like the Age of Pericles prided itself on its individuals. No concern was expressed lest individualism might endanger society for the fully-developed individual was considered to be the perfect citizen. This meant that individuality, or personality as some writers already referred to it, had become for the first time a definite aim of education. It was subject to the limitations of Christian belief but presented the kind of compromise between the individual and the social aim that the Ancient Greeks had been looking for.

Vittorino da Feltre was the supreme example of humanist educators. He had made a successful synthesis between pagan and Christian ideals so that he was educating Christian gentlemen in the tradition of the Stoics. He purported to train mind, body and spirit in one relation and came close to achieving this ideal.

When humanism came to Northern Europe it had to compete against nationalism and the emotional appeal of the Reformation. As a result of this there was more awareness of the dangers of individualism. Erasmus, for instance, placed more emphasis on the social aim of education, stressing the claims of State and Community but showing that this must be attained through the development of individuality by way of liberal training. Education for

society is identical with education for individuality. On the other hand there is a common core of study which needs to be done by all. Woodward doubts whether Erasmus had successfully reconciled the social and individual aims in education.

"At one time he speaks as though the best of rendering service to the community lies in developing one's own personality. At another he is more conscious of the risks attaching to a bold claim for free individual expansion, and to the exclusive temper of the self-absorbed scholar." (Woodward, 1904, p.76)

The Reformation was a revolt of individuals against dogma but, having achieved their freedom, the individuals were afraid and withdrew into authoritarianism. Luther began as a champion of individuality but, afraid of the excesses of the peasant revolt he felt more secure in supporting submission to authority. Calvinism was authoritarian but it encouraged education and made allowances for individual differences as being the result of pre-destination.

The negative form of subjective education continued therefore in most of Protestant Europe with emphasis on repression and discipline while the objective tradition slipped back from the high-water mark of Vittorino to a pre-occupation with subject matter. In Italy Sadoletto arrived at a compromise between education

and individuality which was to foreshadow Herbart.

He described the two divisions of education which, by acting upon the individual in opposing ways, act by modifying the person "by ensuring that all our words and actions may be marked by moderation." (Sadoletto, 1916, p.12) Literary training emphasises the good aspects of our personality and develops them.

"We receive from Nature what is central in ourselves, what indeed make us truly and individually what we are, but in a rough and unfinished form; it is the function of letters to bring this to its highest perfection and to work out in it a beauty comparable to its divine origin." (Sadoletto, 1916, p.12)

This foreshadowed Herbart on individuality in its recognition that there are good and bad characteristics interwoven in the individuality of any person and that it is the concern of education to moderate the undesirable ones and to develop the desirable.

Rabelais compared education by formal scholastic methods with education from life which aimed at the development of personality. This might appear to be what Vittorino had done a century before but Rabelais was more down to earth, more concerned with the actual characteristics of the pupil and the actual characteristics of the world than the Italian humanist whose education appears dilletante beside the robust Frenchman. Rabelais foreshadowed a long

line of educators who emphasized natural education, Vives, Montaigne, Rousseau, Pestalozzi, to mention the most famous.

In England in the sixteenth century the new attitude to education emerged in such writers as Ascham, Mulcaster and Wotton. They all emphasized the importance of developing the natural ability of children, of understanding individual differences and of adjusting instruction to fit the needs of the children but more specifically advocate the enhancement of individuality.

Systematization of Education

As early Renaissance enthusiasm for individuality waned education systems were established which incorporated some of the new principles. The Jesuits, for instance, showed great interest in individual differences but with a view to improving the efficiency of their teaching rather than developing individuality. The Jansenists in France and the Puritans in England both established education systems which starting from the concept of pre-destination, arrived at a concern for the individual. The individual was considered as essentially weak with no control over his own election; yet education was felt to be necessary to make him worthy to receive election if it should come.

"The devil is prowling outside; he very soon assails the baptized; he comes spying out the land; if the Holy

Ghost has not taken up his abode there, he will do so. He assails children and they do not resist him; we must therefore resist him on their behalf." (Fontaine, 1738, p.195)

John Durie, writing in the 'Reformed School', expressed a similar point of view:

"The true end of all human learning is to supply in ourselves and others the defects which proceed from our ignorance of the nature and use of the creatures, and the disorderliness of our natural faculties in using them."

Although some schools had managed to systematize the new ideas, by the middle of the sixteenth century it was necessary to restate the case for individuality in education. Montaigne, believing strongly in the importance of variability, human and otherwise, protested at the artificiality of contemporary education. He considered individual differences to be largely hereditary although the individual continues to develop his personality until the age of twenty when the human soul becomes all that it is capable of becoming. At thirty the absolute limit for the development of the individual is reached. The most successful teachers are Nature, Youth and Health. He saw formal education as limiting individual development and anticipated Rousseau in his demand that the child be left alone. In other words, Montaigne saw formal education and individuality to be mutually antagonistic and his solution

to this dilemma was to make education informal, taking place in real-life situations,

"I would have this world's frame to be my Scholles choice booke." (Montaigne, 1892, I, p.163), and according to the hereditary disposition of the child.

Equality of Intellect

Montaigne was in the direct line of educational thought which led from Rabelais to Rousseau and Pestalozzi. He was in the subjective tradition although, in his careful scientific approach, he was closer in many ways to objective thinkers like Vives, Bacon and Locke. About this time Descartes gave emphasis to the subjective school of education by resurrecting the notion of equality of intelligence. Although this appears to us today to be demonstrably untrue it has been the basis of the thinking of subjective educators ever since. According to Descartes success depends less upon natural qualities than upon a correct training in which the rules of intellectual direction are imposed upon the mind. His belief in the innateness of ideas, whether taken at the extreme level of equal capacity in all men or at the level of potentiality, coupled with this view of the importance of imposing method or organisation on the mind, set the form of modern subjective education. The aim of developing inner qualities is directly opposed to modern objective education which began with Bacon. He favoured the accumulation of knowledge as an educational

objective since he considered reasoning without any background to be vain and the line of thinking was continued by John Locke.

Comenius followed Descartes in seeing all men as essentially equal and added to this a belief in the essential goodness of children. He derived this latter opinion from his belief that God is in everything so that everything which He has created has value. This meant that he advocated universal education:

"And since we believe that knowing, willing and doing are present in the same manner throughout the order of human nature, in all nations, ages and conditions, we have been bold to extend our effort and to inquire into the ways and means by which that universal wisdom may be procured for every human being born, so that there may be no minds left uncultivated or allowed to be out of tune with the general harmony, all alike tinged with Pansophic light."
(Comenius, 1938, p.8)

The final reference in this quotation is to 'Pansophia', the attempt by Comenius to epitomize knowledge in one system. Sir Francis Bacon was the second great influence in Comenius's life, religion being the first. In this way he shared in both educational traditions.

Comenius was one of the first of an important line of educators who felt that through the senses the human potential could be realised and that this potential is equal

in all although more or less obscured by ignorance and sin. Comenius did not, of course, deny all individual differences, he merely thought it unimportant.

"Our purpose is not that all men should become learned (for not every man's native ability nor his condition nor his place makes that possible, and there is no necessity for it) but that all men may be made wise unto salvation." He suggested that education would be easy if, "The intellect be forced to nothing to which its natural bent does not incline it, in accordance with its age and with the right method." (Comenius, 1947, p.127) He returned, in fact, to the values of early Christianity where every human individual was important as possessing an eternal soul. This meant that he valued all men as individuals but for what they held in common rather than in what they differed. His educational aims show the importance he placed on bringing to each and every individual the full dignity of his human nature.

The "New Education" - Rousseau and Pestalozzi

Also in the subjective tradition was Rousseau, who did more than any other single person to advance the case for the individual but was himself in a state of confusion about the place of the individual in society. He was one of those figures whose value to history lies in what he said rather than in what he did, in what he destroyed rather than what he built up. He was neither a practical educationist nor a

great psychologist and yet his influence upon education was greater than Montaigne, Comenius or Locke. Rousseau criticized the society of the eighteenth century with such vigour that the responsibility for the French Revolution has sometimes been laid at his feet. "The Social Contract" provided the ideology for the political planners of the Revolution in the same way as the "Emile" provided the ideology of the New Education.

He proposed a natural education in which a child is made fit for his environment. This sort of education, he considered, was already experienced by the poor, so he directed his arguments at the upper classes. At the end of the educative process the pupil must be left with the capacity to fill any position in life. Natural education is defined as: "An education which forms the man by developing, to the utmost limits of need, all the capacities that enable him to give effect to the basal impulses of his nature." (Rousseau, 1911, p.261)

This is truly an individual education and Rousseau proceeds to develop this thesis. He is of course speaking of the education of the individual by a tutor and not of group education and, although at times Emile's education seems to be approaching individualism, Rousseau is always conscious of the paradox existing in 'education for individuality'.

He considered that there are no individuals in nature and that individuality is the result of a mind which detaches, and abstracts, and re-unites the facts of experience as units. As man becomes conscious of himself as an individual endowed with certain rights, his attitude to his fellow men changes. He forms himself with them into a community, strife is lost, not merely the individuality that at one stage in development counted for so much, but the freer manhood of the individual as well. (Boyd, 1911, p.132)

Rousseau believed that man's two natures, his individual nature and his social nature, are distinct and any evil to be observed in men comes from the social nature. The individual is potentially good and if he fails to realize this potential then the fault lies in society.

"There is not a scoundrel living whose natural propensities would not have produced great virtues if they had been better directed." (Rousseau, 1911, 6, p.154)

Rousseau did not see man's nature as fixed at birth but as dependent upon the total development of the mind. Education is then the act of 'forming' men so that they can fit into society, with the "forms" which are imposed on them remaining in conformity with their own natures. (Rousseau, 1911, p.211) This is difficult because social life is but an imperfect expression of human nature and is likely to have a harmful effect on the developing individual.

Throughout 'Emile' he maintained that one of the greatest evils of education is its repression of individuality. Natural or negative education interferes as little as possible with "the individual genius of the child". Instead it allows the child to develop as fully as possible in the direction of his natural dispositions.

"Diversity of mind and character cannot be explained by education, and consequently it is vain to think of making all children conform to a uniform ideal imposed on them by adult wisdom, irrespective of initial endowment. Instead of trying to change the natural dispositions, the educator should rather seek to develop them to their fullest extent." (Rousseau, 1911, 6, p.258)

Any change in the mind can only be brought about by a change in its internal organization and Rousseau considers that any changes in character must come through changes in the basic temperaments. It is evident from this that Rousseau did not hold the extreme environmentalist views which are frequently attributed to him. Rousseau raised specifically the fundamental question which was later to be taken up in such detail by Herbart: how can individuality be preserved during the process of education for social life? His answer to the question is similar to that of Herbart. The child's nature should be studied carefully and those characteristics which are desirable should be encouraged while those that are not should be

discouraged. Later in his life Rousseau adopted a concept of state education entrusted, in Platonic style, to magistrates, men of standing, who have proved themselves in service to the state. He exceeded Plato in giving to these men the actual teaching responsibility.

In his treatise "Memorandum on the Government of Poland" he went even further in advocating a national education.

"It is education that should put the national stamp on men's minds and give the direction to their opinions and tastes which will make them patriots." (Rousseau, 1956, p.190)

Rousseau beginning from an extreme individualistic position, ended up in a position which should best be described as that of extreme socialism. His mistake, according to Boyd, is that he adopted an "either-or" position. Education had to be either individualistic or socialistic. When he realised that the individualistic education of "Emile", though suitable for France, was unsuitable for a small state like Geneva he swung to the other extreme and suggested an education system completely subordinate to the national issue.

Pestalozzi was greatly influenced by the spirit of Rousseau and the terminology of Leibniz but his ideas were his own and even in a time of revolution he was a revolutionary. To him the aim of education is the perfection

of nature, so that man can arrive at happiness through the nurture of his God-given powers.

"The cultivation of the powers inherent in human nature towards pure wisdom is the ultimate aim of education." (Pestalozzi, 1960, p.33)

Our main impression of Pestalozzi is his insistence that all human beings are equal in their capacity to benefit by education. He could find his justification for this belief in Descartes and less specifically in Leibniz. Thus education takes place through the experience of love which the child experiences in the happy home. Here are two differences between him and Rousseau; his insistence that all children, whatever their social position, should be educated and his certainty that love is the main agent of education.

It is only later that he introduced ideas of individual differences. These are social, rather than physical or intellectual differences, for social differences are still the most important kinds of human variation. "Man, if you seek truth in this way of Nature, you will find it as you need it according to your station and your career. Following the path of your nature you cannot make use of all truths. The sphere of knowledge from which man in his individual station can receive happiness is limited; its sphere begins closely around him, around his own self and his nearest relationships." (Pestalozzi, 1950, p.259)

Yet he did not think of popular education as purely vocational as did most philanthropists of his time.

Education for a particular occupation must always be subordinate to education for the perfection of the whole man and his attainment of inner peace. To Pestalozzi all previous education had been directed towards man's lower nature rather than to his higher powers. Culture, he considered, can be achieved only by individual effort so that education must consist of the raising up of each individual. This can take place only through the development of all the faculties inherent in every individual. He placed great importance on individuality and took individual differences into account but he was convinced that most of these differences could be removed by education.

The Highpoint of Subjective Education

Froebel was one of Pestalozzi's visitors at Yverdun. He was a mystic, impressed as was Comenius, with the unity of nature and reaching perhaps nearer than any others to a synthesis of the individual and the society in a system of education.

He began from one eternal universal law in which science and religion come together, for he considered science to be the expression of the mind of God.

"This unity is God. All things have come from the Divine Unity, from God, and have their origin in the

Divine Unity, in God alone." (Froebel, 1909, p.1)

Man as an intelligent, rational being should become conscious of this divine unity and its working within himself. It is the purpose of education to lead man to such a knowledge of the Divine Unity. A comparison may be drawn here with Herbert Spencer who saw philosophy as the completely unified knowledge and education as a leading up to that knowledge.

"Education should lead and guide man to clearness concerning himself and in himself, to peace with nature, and to unity with God." (Froebel, 1909, p.5)

Education is leading and guiding but it is not instructing or forcing, or direction and each child from the very beginning of his life should be "viewed and treated as a necessary essential member of humanity." (Froebel, 1909, p.16) Froebel distinguished a trinity of relations - God, nature and humanity. God himself is expressed in unity, nature in diversity and humanity in individuality. Each human being within his development goes through the successive culture stages of his race. Each individual is important "for in every human being, as a member of humanity and as a child of God, there lies and lives humanity as a whole: but in each one it is realized and expressed in a wholly particular, peculiar, personal, unique manner; and it should be exhibited in each individual human being in this wholly peculiar, unique manner." (Froebel, 1909, p.18)

Yet, to Froebel, individuality, while important, was subordinate to universal humanity. His insistence on the essential goodness of mankind tended to obscure the question of individual differences. The extreme position taken up by Froebel on this matter has been criticized even by those who rate most highly his impact on education. Isaac says, "The one picture which I think we can no longer retain is that of the infant whose life is all happiness and goodness and content and who has only to be spared gratuitous mistakes or mishandling to grow from bliss to bliss into untroubled and joyous and more nearly divine perfection. The Froebelian vision of the child is a dream." (Isaac, 1952, p.212) Yet, in spite of being discredited in this way, Froebel goes on influencing educational thought through the Kindergarten movement, the Froebel Society, the New Education Fellowship, the writings of John Dewey and many other offshoots of his thought.

Objective Education

The objective tradition which had returned with the re-discovery of Aristotle and Quintilian was given its modern form by Bacon and was inherited by John Locke. Linking the two was Thomas Hobbes who has been described as the father of empirical psychology. As such one would expect him to be firmly in the objective tradition and it is a little surprising to find that he too, gave his support

to equality of intellectual endowment since he considered that "the difference between man, and man is not so considerable as that one man can thereupon claim to himself any benefit, to which another may not pretend as well as he". (Hobbes, 1881, p.63) Locke placed great emphasis on the value of education:

"I think I may say that of all the men we meet with, nine parts of ten are what they are, good or evil, useful or not, by their education". (Locke, 1693, p.1)

And he concluded that it is not possible to make a comprehensive treatment of education because of the extensive individual variations.

"The variety is so great, that it would require a volume; nor would that reach it." (Locke, 1690, p.216)

Quick, the nineteenth century essayist feels that this is an indication of Locke's inferiority as an educational thinker.

"He makes little attempt to reach a scientific standpoint and to establish general truths about our common human nature. He thinks not so much of the man as the gentleman, not so much of the common laws of the mind as of the peculiarities of the individual child." (Quick, 1907, p.229)

Having criticized Locke for excessive interest in human peculiarities Quick proceeds to criticize him for calling children tablets of wax.

"No one with an adequate notion of education could ever compare the young child to 'white paper or wax'" (Quick, 1907, p.230)

He seems to be criticizing Locke on the one hand for taking too much account of individuality and on the other for considering children as though they had no individuality other than education has put there. Locke has frequently been criticized for his wax tablet statement but if we look at what he actually did say we can see that the criticism is unjustified. Having stated that human variety is so great as to make generalization difficult he goes on to say

"But having had here only some general views, in reference to the main end and aims of education, and those designed for a gentleman's son, whom being then very little, I considered only as white paper, or wax, to be moulded and fashioned as one pleases." (Locke, 1693, p.216)

In other words Locke chose to consider the child as if he were wax for the purposes of simplification.

Although Locke made abundantly clear that he recognized deep-seated differences in attitude, temper and disposition he appears as the authority quoted by Helvetius (1715-1771) in support of an intellectual egalitarianism. According to Helvetius education is all-powerful being the sole cause of intellectual differences and the child's mind is nothing but an empty

capacity without any predisposition.

Locke was misrepresented as an extreme environmentalist and this label appears to have been attached to him at intervals ever since. It was perhaps his firm stand over innate ideas that has caused him to be misunderstood.

Locke's opposition to the theory that many ideas are common to mankind because they are innate was interpreted as a disbelief in the importance of heredity. It should instead be seen as an attempt to distinguish those innate characteristics which vary from one person to another from those which are common to mankind.

Another objective approach to education was taken by the phrenologists although even here we can see the buoyant optimism in man's capacity for education which is so characteristic of the subjective tradition. The phrenologists combined an interest in studying the individual with a belief in the power of education to develop the individual's under-developed faculties. It was felt that exercising the mental organs developed mental powers in a manner similar to that by which physical exercise develops the body.

Although objective education was based on the reasonable and empirical premises that man is essentially neutral and that he becomes what his environment makes him, it has not been as popular among thinkers as the idealistic view of mankind maintained by the subjective tradition.

So we find even an associationist, James Mill and the founder of physiological psychology, Cabanis making subjective statements. Cabanis emphasized the instinctive basis of behaviour and followed Rousseau in describing education as the development of natural powers. James Mill suggested that the mass of mankind are equal in their susceptibility to education and earned sharp criticism from Bain, the dean of the associationists:

"On this subject the author is the victim of a theory that grossly misrepresents the facts. The power of education is great, but it does not account for all the differences of character of men and races." (Bain, 1882, p.249) Mill's education was also a natural one in which children are "made to see, and hear, and feel, and taste, in the order of the most invariable and comprehensive sequences, in order that the ideas which correspond to their impressions, and follow the same order of succession, may be an exact transcript of nature." (Mill, 1826, p.250)

The Merging of the Two Traditions

In fact both traditions were beginning to indicate the lines upon which they were eventually to merge, - the psychology of the child and the psychology of learning. Although, in the latter, the rift continued in the form of Behaviourism versus Gestalt theories of learning. The

differences in education remains today as one of emphasis and attitude, the difference between child-centred and subject-centred education with objective educators like Admiral Rickover rebuking the subjective educators for their neglect of academic standards, in their concern for the individuality of the child. (Rickover, 1963).

Herbart was chief among those who brought the two traditions together. To him the individual is neither completely plastic on the one hand nor the unconscious possessor of natural order and wisdom on the other. He is instead the sum total of a large number of mental activities, inherited predispositions, called presentations. These presentations have no organization at first but, through experience, they are added to and patterned into circles of thought. These circles of thought subsequently determine future behaviour. Herbart defined the aim of education as morality or the formation of character. The teacher must help the child to form the correct circles of thought so that he is enabled to will in the right direction. "Since morality has its place singly and only in the individual's will, founded on right insight, it follows of itself, first and foremost that the work of moral education is not by any means to develop a certain external mode of action, but rather insight together with corresponding volition in the mind of the pupil." (Herbart, 1897, p.111) The pupil should be brought to the position when he himself

can choose between good and bad. In making this choice, his character is formed. The teacher's job, therefore, is to develop in the child correct attitudes of mind so that he will have no choice but to make correct decisions. This is a theory of habit similar to that of Aristotle although we find that Herbart referred to it as the forming of interest.

It was from this aim of developing "many-sided interest" that Herbart's work on individual psychology took its departure. He spoke clearly on the topic of individuality.

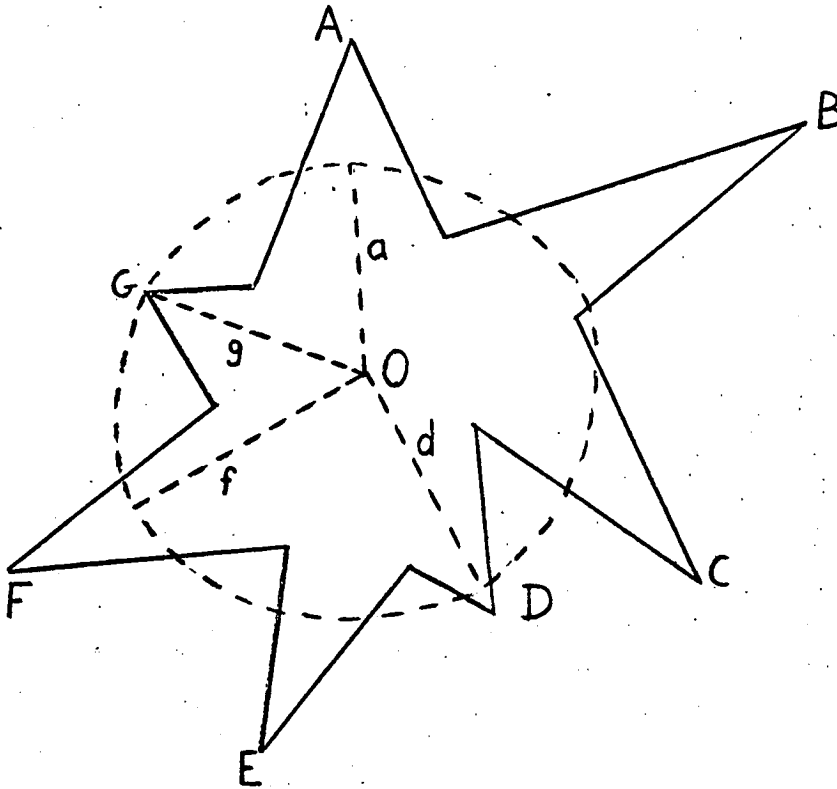
"The teacher ought to make it a point of honour to leave the individuality as untouched as possible; to leave to it the only glory of which it is capable, namely to be sharply defined and recognizable even to conspicuousness, that the example of the race may not appear insignificant by the side of the race itself and vanish as indifferent." (Herbart, 1897, p.35).

When the assumption is made that free-will is innate and absolute then moral education is unnecessary. Education may be restricted to the giving of information. When we reduce free-will to a matter of hierarchy of presentations and presentations to the business of the schoolmaster, then we raise the question, "Is individuality consistent with education?" or as Herbart himself puts it "Is individuality consistent with many-sided interest."

He solved the contradiction of development of character and preservation of individuality in an ingenious way. First of all he distinguished clearly between character and individuality. "Willing, determination takes place in consciousness. Individuality on the other hand, is unconscious. Character most inevitably expresses itself in opposition to individuality through conflict. For character is simple and steadfast; whilst individuality is continuously sending forth from its depths new fancies and desires." (Davidson, 1906, p.175).

This would seem to suggest that individuality is innate and unconscious rather like the Freudian Id. Like the Id it must not be repressed but rather directed into new channels. Although it is capable of direction in this way it still preserves its identity in the way that the body can grow and develop and yet retain its identity. The character is conceived, like the Super-Ego, as in opposition to the individuality.

The soul, of course, in this interpretation fills the capacity of Ego. Herbart, however, unlike Freud considers the possibility of correlating individuality and character. He represents individuality as an irregular many pointed star. "The projections represent the strength of the individuality or the directions and extent of the soul activities from its starting point 0. The soul-activity left entirely to itself will naturally continue to function



Figures No. 5. Herbart's Concept of Individuality.
The "many-pointed star" and the
"circle of thought".
(after Davidson, 1906, p. 178)

in the old directions ----- the projections A,B,C etc., will tend to extend more and more." (Davidson, 1906, p.178). Projections A, G, F, D represent activities of individuality in acceptable directions while B,C,E are morally unacceptable. The teacher encourages development along lines A,G, F and D through the appropriate lines of interest Oa, Og, Of, Od. The child will develop naturally along these lines because they are in the direction in which his individuality wished to go. The teacher cannot destroy the projections in the wrong direction but he can discourage their use so that while never completely disappearing they will be properly controlled.

The figure will become closer to the 'circle of thought' the more successful the education is, although it will never completely coincide with it. The lines of interest radiate from O which represents the individual before he can be studied psychologically. By the time education starts O has already become an irregularly shaped figure in which the lines of interest can be discerned. In this way Herbart conceptualized an education along individual lines which results in a socially acceptable character. He proposed an answer to the perpetual problem of the reconciliation of individual and society.

Rosenkranz held to the Platonic notion of innate ideas. Education is the influencing of man by man so that he is brought to "actualize" himself through his own effort:

"In a more restricted sense, we mean by Education the shaping of the individual life by the law of nature, the rhythm of national customs and the might of destiny: since in these each one finds limits set to his arbitrary will". (Rosenkranz, 1907, p.21)

There are two divergent views on the limits of education. One stresses the weakness of the pupil and the influence of the teacher - this is akin to the tabula rasa theory. The other urges that individuality is unconquerable and that it makes of no avail any effort to work contrary to it. Rosenkranz suggested that the first view is a "superstitious belief in the power of Education", while the other would lead to the neglect of education so that it would appear as "a sort of vegetation of individuality growing at haphazard." (Rosenkranz, 1876, p.31)

Actually there are three factors which limit the efficacy of education. The first, the subjective one, is set by the child's individuality since nothing that does not exist as a possibility within his nature can develop in that nature, "Education can only lead and assist; it cannot create". (Rosenkranz, 1876, p.31) Education cannot make up the deficiencies of nature and talent can only be distorted, not suppressed. The second limit to education is the objective one that is the actual experience of education. Speaking of individual education, he said:

"Individuality as an educational principle is indeed selfish in so far as it endeavours to cultivate its own peculiarity, but it is at the same time noble. It desires not to have but to be". (Rosenkranz, 1907, p.216)

Individuality begins with what is natural and then elevates nature to the ideal. There are three stages in individual education "aesthetic", which aims to make each man a work of art, "practical" in which the development of the will is stressed and the "daemonic" in which the recognition of the peculiar self of the individual is all that matters. The first, he says, is exemplified by the Greek, the second by the Romans and the third by the anarchic Gothic tribes.

Christianity rescued individuality and gave it its true actualization. After discussing various approaches to education, he advocates a "free education" which should provide for all classes of society. "The education of the state must furnish a preparation for the unfettered activity of self-conscious humanity" (Rosenkranz, 1907, p.206)

The third of absolute limit is determined by the learning task. When the learning is complete, education, in that topic at least has reached its limit.

"The end and aim of education is the emancipation of the youth. It strives to make him self-dependent and as soon as he has become so it wished to retire and to be able to leave him the sole responsibility of his actions." (Rosenkranz, 1876, p.32)

In this treatise Rosenkranz echoed both Rousseau and Herbart and formed a bridge between "natural" and "scientific" education.

Spencer applied the criteria of common-sense and nineteenth century utilitarianism to education. He placed great emphasis upon heredity and did not view education as having unlimited powers.

"We are satisfied that, though imperfections of nature may be diminished by wise management, they cannot be removed by it." (Spencer, 1911, p.86) Spencer really shows his bland, dispassionate nature in his next remark, "Hence, if those who regard education, intellectual or moral, as the panacea, we may say that their undue expectations are not without use; and that perhaps it is part of the beneficent order of things that their confidence cannot be shaken." (Spencer, 1911, p.86) High ideals, in other words, make very satisfactory carrots.

He laid down, among other educational aphorisms, that the development of the individual must parallel that of the race and he supported individual, independent activity. Yet although he often struck a modern note he was always cautious and scientific never enthusiastic and inspiring like so many of his contemporaries. (Pestalozzi, Froebel, Herbart and Dewey were some of those writing during Spencer's life) He was, for example, against harsh discipline but said, "methods of discipline neither can be nor should be

ameliorated, except by instalments." (Spencer, 1911, p.91)

As a utilitarian he believed that education should keep pace with society by supplying the needs of society. Yet at the same time he had a strong feeling for personal liberty and independence. This is typical of his age and we can think of the Victorian gentleman laying down the law for his family and yet at the same time defending his own freedom to act in whatever way he pleased. Spencer is a good example of much of the thinking of his time and a good example of the hard-headed, practical school of education which opposed, and still opposes, those who belong to what James called soft pedagogics. As such Spencer has had a good influence since he presented a well-written account of this alternative approach to education.

With the beginning of the twentieth century new evidence on the nature of children made the extremes of both the subjective and objective traditions untenable. Montessori would best illustrate the new approach since she was at the same time a scientist and an idealist. Montessori was a doctor, trained in physiology, and she carried on the work of Itard and Seguin with mentally deficient children. Thus, she was operating in a different tradition, beginning from a different standpoint from that of Froebel. She began by studying one of the extremes of human variability, the education of the idiots. She reported that methods were efficacious but spiritually exhausting. Two idiots under her instruction were so

successfully rehabilitated that they were capable of passing a public examination along with normal children. Froebel, we feel, would have considered this episode as an example of the potential equality of mankind. Given equal opportunity every child would be capable of revealing his essential humanity. We, today, might consider it to be chiefly interesting as an example of faulty diagnosis but Montessori saw it as an indication of the unexploited potential of the normal child.

"The abyss between the inferior mentality of the idiot and that of the normal brain can never be bridged if the normal child has reached his full development".

(Montessori, 1912, p.38)

Her studies of Seguin and his methods led her to make the following statement:

"The man who had studied abnormal children for thirty years expressed the idea that the physiological method, which has as its base the individual study of the pupil and which forms its educative methods upon the analysis of physiological and psychological phenomena, must come also to be applied to normal children. This step he believed would show the way to a complete human regeneration".

(Montessori, 1912, p.42) She described the child's intellectual development in analogies drawn directly from physiology.

She saw the new born child as a 'spiritual embryo

with latent psychic capacities'. These capacities are not like the instincts of animals, 'fixed and determined' but are individual and therefore unpredictable.

"There is thus a secret in the soul of the child, impossible to penetrate unless he himself reveals it as little by little he builds up his being". (Montessori, 1936, p.18) This means that the child needs to develop in an environment "analogous to the sheaths and veils that nature has set around the physical embryo". (Montessori, 1936, p.18) Within such an environment the child will develop according to the pattern of his species but with unsuspected individual variations.

"Thus the human personality forms itself by itself like the embryo, and the child becomes the creator of the man, the father of the man". (Montessori, 1936, p.36)

Her subjective sympathies are revealed in a later work in which she attempts to integrate her ideas of the nature of the child with that of Freudian psychology:

"If there is an essential difference between what psycho-analysis has discovered and this psychology of the unknown child, it consists primarily in this: that what lies secret in the sub-consciousness of the child is something repressed by the individual himself. The individual himself must help to disentangle the tangled skein". (Montessori, 1936, p.126)

Here is another expression of Plato's innate ideas, this time in terms of the Freudian unconscious. Yet in

other ways, the didactic approach, the emphasis on order and discipline, Montessori is expressing an objective approach. It is perhaps because she has been able to combine the idealism of Rousseau and Froebel with the intellectual discipline of their opponents that the Montessori Method is experiencing something of a revival today.

THE EDUCATIONAL DIMENSION - PRACTICAL CONSIDERATIONS

To have a concern for individuality and an appreciation of individual differences is one matter; to translate these feelings into educational practice is another matter altogether. At no time has this been so apparent as today, when there is fairly general agreement about the importance of individuality, but no generally acceptable way of achieving it. The problem is partly one of applied psychology: the utilization of knowledge, understanding, skills and attitudes with respect to particular individuals in the classroom and the application of learning theory to their education. It is also a problem in practical pedagogy: the organization of groups, the planning of curriculum and the application of classroom techniques.

Some educators, recognizing the extent of human variability and considering it to be a handicap to efficient education, have evolved techniques designed to reduce the extent of this variability. Other educators have considered the enhancement of individuality as an aim of education and individual differences as a valuable aid towards achieving this aim. Most educators have ignored the issue and have been content to use the methods they inherited.

The Origin of Subjective & Objective Traditions

Plato's plan in 'The Republic' is an early attempt to limit the range of individual differences by a process of

selection. He urged city rulers to "watch over their offspring and see what element mingle in their nature". (Plato, 1871, II, p.243). From their study of the elements in children it could be decided to which of three types the children belonged. The first type consisted of the majority of men who are controlled by their appetites, the second contained those in whom spirit predominates and the third those in whom reason controls their life.

These three types are related directly to his conception of the ideal state so that the appetitive type make up the industrial class, the spirited type, the military class, and the rational type, the philosophers or ruling class.

"You are brothers, yet God has framed you differently. Some of you have the power of command, and these he has composed of gold, wherefore also they have the greatest honour; others of silver, to be auxiliaries; others again who are to be husbandmen, and craftsmen he had made of brass and iron; and the species will generally be preserved in the children. But as you are of the same original family, a golden parent will sometimes have a silver son, or a silver parent a golden son. And God proclaims to the rulers, as a first principle, that before all they should watch over their offspring and see what elements mingle in their nature; for if the son of a golden or silver parent has an admixture of brass and iron, then nature orders a transposition of ranks, and the eye of the ruler must not be pitiful towards his child

because he has to descend in the scale and become a husbandman or artisan, just as there may be others sprung from the artisan class who are raised to honour, and become guardians and auxiliaries." (Plato, 1871 II, p.243).

This is an early example at selection in education based on an over-simplified view of individual differences. The recent publication, "The Rise of the Meritocracy" (Young, 1958), describes a similar system applied to education in Britain in the future. A "meritocracy", an elite of intelligence is formed and maintained by selection and special education and like Plato's Republic, dull children of the ruling class are demoted and bright children of the working class are promoted.

Plato is seen to be advocating a meritocracy rather than merely sanctioning class distinction when he urges the city rulers to "watch over their offspring and see what elements mingle in their nature". (Plato, 1871, II, p.243).

Although this plan belongs to the 'reduce individual differences' class of answer, Plato stressed the development of native capacity and was critical of teaching methods that try to shape the child in a mould. As an example of this he said in "Protagoras": "If the child obeys, well and good; if not, he is straightened by threats and blows, like a piece of warped wood." (Plato, 1871, I, p.133).

In "The Republic" we can find another statement which could be a sentence from a progressive education

journal. Speaking of compulsory exercises he said that they do no harm but "knowledge which is acquired under compulsion, has no hold on the mind...Then do not use compulsion, but let early education be a sort of amusement; that will better enable you to find out the natural bent." (Plato, 1871, II, p.377).

In fact Plato made a beginning both to the practical, 'reduction to a formula' method favoured by the objective tradition of education and the intuitional, 'know the child', approach of subjective education.

The First Individual Education

Quintilian made the first practical suggestions for an individual education. In his *Institutio Oratoria* he wrote a treatise on teaching method which seems remarkably up-to-date today. The book was concerned with the education of an orator and began with the method of primary instruction. Quintilian first stressed that most children can respond to instruction, "There is no foundation in fact for the complaint that to very few is given the power of understanding what is taught them but the majority waste both time and labour through slowness of intellect. On the contrary you can find many who are clever at puzzling things out and quick at learning". (Quintilian, 1938, p.11).

He went on to say that lack of intelligence ("dullness and lack of aptitude") is comparable with bodily abnormality and is rare. Although there are differences in

natural ability, all men will profit, to varying extents from education. Good teachers are important and so is the general educational standard of the slaves and household servants for only then is the total environment satisfactory. He debated the question of public or private education and came out heavily on the side of public education provided that due consideration is given to individual instruction in the classroom.

"Accordingly instruction can be given to several pupils in succession even in cases where individual attention is required." (Quintilian, 1938, p.24).

He stressed that it is the duty of the teacher to investigate the personality and ability of his pupils, "The skilled teacher, when a pupil is entrusted to his care, will seek to discover his ability and natural disposition." (Quintilian, 1938, p.30).

He advocated the forming of habits at an early stage but condemned corporal punishment as "fit only for slaves and undoubtedly an insult." He was opposed to any severe form of correction and felt that any disciplinary action should be tailored to fit the particular age and "the measure of the pupil's intellectual powers." (Quintilian, 1938, p.32).

He devoted a complete section to the question "Should the training of each pupil follow his natural bent?" Emphasizing the range of individual differences, "there is an

unbelievable variety, and types of mind are no less numerous than types of body," (Quintilian, 1938, p.101), he stated that most teachers have found it expedient to train each pupil so as to foster his unique gifts. He explained that there is an opinion that careful training of the natural bent increases the mental strength of the pupil while neglect "enfeebles those gifts for the exercise of which he seems to have been borne" (Quintilian, 1938, p.102). This view, is only partially true but the importance of distinguishing the peculiar gifts of the individual is fundamental. Once we have arrived at this point, it is essential to consider whether we content ourselves with encouraging natural gifts or, in addition, try to supply what is lacking. Quintilian believed that the latter course should be adopted.

"Not that I am fighting against nature: I do not hold that any good gift of nature should be neglected, but I do maintain that such a gift should be fostered and that what is lacking should be supplied." (Quintilian, 1938, p.103). He developed this idea with reference to Isocrates and suggested that, while the lower ability group may be extended only to the limit of their intelligence, those with special talents must be encouraged in every way. Such gifted pupils may with care, be developed in all other branches of study. This is an early recognition of the general all-roundness of ability of the gifted child which was to be demonstrated in the twentieth century by Terman. Quintilian warned that there

are two procedures which must be avoided. The first is attempting the impossible and the second is transferring the pupil into another situation in which he also fails.

Quintilian is the first to systematically apply the understanding of individual differences to education. He may be deficient in educational philosophy as Ulich suggests but he is certainly a pioneer in the science of education. He makes the first thorough treatment of teaching methods and the first systematic consideration of the importance in teaching of understanding individual differences. His ideas belong to the objective tradition although they proved a source of inspiration to both traditions of education in the Renaissance.

Mediaeval Disinterest in Individual Differences

Early Christian education showed little of the psychological insight of Quintilian but there is some scattered evidence of consideration for individual differences. St. Clement in the Second Century A.D. throws some light on the Christian attitude to education. In the "Pedagogue" Christ is the Instructor but from Clement's description of the way in which the divine instructor works, we can draw conclusions about human instruction. For example, in discussing Christ's discipline of the Church, he lists eleven different kinds of reproof. Hodgson says, "St. Clement attributes to the Instructor a system of wise discrimination, a method which aims at discerning, at diagnosing the cause of failure and then applying the appropriate remedy." (Hodgson,

1906, p.131). In his "Address to the Greeks" Clement himself said, "Not as a teacher speaking to his pupils, not as a master to his domestic, not as God to men but as a father, does the Lord greatly admonish His children." (Hodgson, 1906, p.134).

He clearly indicated that methods used as discipline should be adjusted to different natures.

"I say then that praise or blame are medicines most essential of all to men. Some are ill to cure, and, like iron are wrought into shape with fire, and hammer and anvil, that is, with threatening and reproof and chastisement, while others...grow by praise." (Hodgson, 1906, p.135).

Early Christian teaching methods at their best are illustrated by Gregory's description of the methods used by Origen. He employed the metaphor of the gardener:

"And thorns and thistles and every kind of wild herb or plant which our mind (so unregulated and precipitate in its own action) yielded and produced in its uncultured luxuriance and native wildness, he cut out and thoroughly removed by the process of reputation and prohibition; sometimes assailing us in the genuine Socratic fashion, and again upsetting us by his argumentation whenever he saw us getting restive under him, like so many unbroken steeds and springing out of the course and galloping madly at random until with a strange kind of persuasiveness and restraint he reduced us to a State of quietude." (Hodgson, 1906, p.212).

Later he exhorts teachers to have some consideration for individual differences in learning:

"But we upon whose efforts is staked the salvation of a soul...what a struggle ought ours to be, and how great skill do we require to treat, or to get men treated properly and to change their life and give up the clay to the spirit. For men and women, young and old, rich and poor, the sanguine and despondent, the sick and whole, rulers and ruled, the wise and ignorant, the cowardly and courageous, the wrathful and meek, the successful and failing, do not require the same instruction and encouragement." (Hodgson, 1906, p.113). In St. Gregory's "Defence of His Flight to Pontus" he spends several paragraphs detailing the different methods to be used in instructing different people. Different men require different medicines and different foods and, in the same way, different souls need different instruction. Some need doctrine, some example, some the spur, others the curb, some praise, others blame, some need to be closely watched, others are best left unsupervised.

"Some it is more advantageous to conquer - by others to be overcome." (Hodgson, 1906, p.220).

St. Cyril in the Fourth Century showed that he was aware that the different levels of ability of the catechumens he was teaching caused problems. Those of lower intelligence had difficulty in understanding the intellectual element in the new faith, those of higher intelligence were liable to miss the truth through over subtlety.

The great emphasis on punishment and discipline in these quotations illustrates the Christian belief in the essential evil of man and the need to curb these evil tendencies. The subjective tradition came to the surface whenever the doctrine of original sin was forgotten. Then education was seen as the drawing out of innate characteristics and methods which favoured this 'drawing-out' process were suggested. St. Augustine, for example, who did more than any other to establish the doctrine of original sin spoke of learning as recollection. This meant that, since knowledge is innate, then education implies the expression of what is known already. This means that the teacher is seen as not being able to teach but only to cause to learn. This statement seems particularly modern. Following Plato, Augustine saw education as the turning round of the soul. This, however, cannot happen unless the soul is in a fit condition and to achieve this an act of will is necessary. So that the beginning of knowledge is the will to learn. Augustine suggests that one way of attaining knowledge is by submission to authority through which "he that would learn becomes fit to learn."

Mediaeval education made no conscious effort to take into account human variability, although the small numbers educated at any one time must have encouraged the use of the tutorial method. Aquinas spoke out against educational techniques which treated the pupil as a passive agent:.

"A teacher must not be pictured as pouring his knowledge into the learner, as though particles of the same knowledge could pass from one subject to another." (Aquinas, 1951, p.376).

There appear to be, however, no practical recommendations to the Mediaeval teacher on how to cater for individual differences or preserve the individuality of the pupil.

Interest in Special Education

With the re-orientation towards Aristotle and the objective tradition of education there began a growing concern for the mechanics of teaching. This included an interest in special educational provisions. Gerson, at the end of the mediaeval period, made a special plea for gifted children and declared that they learn through praise rather than by punishment. The children, particularly those that are shy, must be convinced that the teacher is their friend and this he will not do "unless he smiles kindly at the laughing ones, encourages those who play, praises their progress in learning, and when remonstrating, avoids all that is bitter and insulting." (Ulich, 1947, pp.181-190).

Aschan was concerned about 'slow learners'. Speaking of the harsh schoolmaster of his day, "your great beaters", he said that they damaged the better nature as often as they corrected faults. Those who are slow in learning are commonly punished, while those who are quick are praised.

The wise schoolmaster should rather "discreetly consider the right disposition of both their natures, and not so much weight what either of them is likely to do now, as what either of them is likely to do hereafter." (Aschan, 1870, p.32). He insisted more than once that quickness of learning and retention do not go together and offered as an explanation of this that precocious children waste their youth and come to nothing.

Differential Curriculum

An interest in curriculum was shown by Vittorino, who discussed the advisability of fitting studies to ability. The choice of study will depend upon the kind of mind the individual has, for some boys seize the point quickly, others slowly, yet the slow one may have the sounder understanding. Of these two types the former may be better at poetry or the abstract sciences, the latter at practical pursuits or the study of Rhetoric. Some boys are good at grasping abstract truths but are deficient in concrete learning; such boys can learn mathematics and metaphysics well. We must remember that mental endowments differ and must let the boy of limited capacity study only those subjects in which he can achieve some results. Vittorino also freed the curriculum from the iron hand of the quadrivium, offering a wide variety of subjects. The curriculum included Latin and Greek as channels for grammar, composition, poetry, science and history. Music was an

important subject as it had been in Greece and mathematics, astronomy and philosophy were also taught. In addition physical activities, particularly riding, swimming and fencing were encouraged and there was a genuine concern for physical development. In fact the aim of education with Vittorino, as with all these early humanist educators, was wholeness - all round development.

On the other hand in achieving this wholeness there was no sacrifice of individuality. Not only were students allowed to concentrate upon the subjects they were best fitted for but a continual effort to cater for their individual needs was made. Vittorino, who taught some eight hours a day, devoted the mornings to class-work and the evenings to individual tutorials. The individual work was an especial feature of his methods and accounted for much of its success. He had a large staff so that much time was spent on each individual student and the teachers were able to gain "that intimate knowledge of the tastes, capacity and industry of each scholar, which, with his readiness to adapt thereto his choice both of subject and treatment, secured the unique success for which his school was celebrated." (Woodward, 1905, p.63). The Italian Renaissance schools were remarkable also in admitting girls and also talented children of poor parents.

There were other educators who looked to the subject matter of education to provide a means of developing

individuality. Different sets of experiences were suggested to develop different aspects of the individual. One set would lead towards the social aim of conforming to the group; the other towards the individual aim of enhancing the person's own talents. Sadoletto, for instance, proposed moral training which modifies the person by ensuring that all our words and actions may be marked by moderation. (Sadoletto, 1916, p.42). Literary training emphasises the good aspects of our personality and develops them.

He also indicated that character training is a complex affair and not one for which simple rules can be laid down.

"Stages in the training of character are marked not only by reason, but also by time...Character is a composite thing, and cannot be treated upon a uniform plan. One element early is that which is impressed upon us by the careful and systematic teaching of others: another and a different element is that which we acquire for ourselves by the purposive effect of our own minds." (Sadoletto, 1916, p.13).

His theory of character development had much in common with that of Herbart. He saw the procedure as developmental and the job of education as the provision of the correct experiences at the correct time.

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Educational methods were often described in figurative terms and a favourite way of describing individual methods of teaching is through the metaphor of the gardener. Elyot, an English humanist described education this way:

"To the extent that I wyll declare howe suche personages may be prepared, I will use the policie of a wyse and counnyng gardener: who purposynge to have in his gardeine a fyne and precieuse herbe, that shulde be to hym and all other repairyng thereto, excellently comodiouse or pleasant, he will first serche through his gardeyne where he can find the most melowe and fertile erth: and therein wil he put the sede of the herbe to growe and be norissed: and in most diligent wise attende that no weede be suffred to growe or aproche nyghe unto it: and to the extent to may thrive and faster, as soone as the fourme or an herbe ones appereth, he will set a vessell of water by it, in suche wyse that it may continually distelle on the rote swete droppes; and as it spryngeth in stalke, under sette it with some thyng that it breake nat, and alway kepe it cleane from weedes. Semblable ordre will I ensue in the fourmyng the gentill wittes of noble mennes children." (Elyot, 1907, p.19).

Rabelais also was concerned with the curriculum. He was impatient of the artificiality of contemporary education and wrote his satire as a protest against it. Gargantus, his giant hero, is first educated by scholastic methods which so neglect his native capacities that he is left dull and apathetic with no social graces but much useless book learning. (Rabelais, 1955, Ch.21,22). Following this, Gargantua undergoes education under the new system which with a freer approach develops the intelligence and the character. (Rabelais, 1955, Ch. 23, 24). In order to this, the tutor studies and observes his pupil in order to judge his natural disposition and then slowly sets to work to develop his personality.

In many respects Rabelais foreshadowed those other great French educational writers Montaigne and Rousseau for, amid the grotesque imagery of his description, was a complete system of education. His aim, like that of Montaigne, was to develop the pupil's own thoughts. His methods, with their emphasis on nature, on learning from life, e.g. scientific excursions to shops and factories, manual labour like sawing wood and threshing grain, physical activity such as swimming and fencing and object lessons in field and wood remind us of Rousseau. In his belief that you should teach about things by observing the things themselves, he was well ahead of his time and foreshadowed Pestalozzi.

Vives was another who suggested learning through nature. Books are important but "He who would advance still

further must study outward nature by close observation." (Vives, 1913, p.121). In Rabelais and Vives is a beginning to the "natural" education, the education through sense impressions which was to be so important in the eighteenth and nineteenth century. Vives is really consistent about his consideration for human variability. He goes into detail about the kind of people, judged by intelligence and personality, who are capable of profiting from different subjects. He suggests that punishment should be adjusted not to fit the crime but to fit the criminal and he sums up that the teacher's attitude should be the consideration that no two boys have received the same natural endowment and that in fact the individual will himself vary from time to time according to his environment. In spite of the difficulty involved in studying such a variable factor it is most useful for the teacher to try to follow the variations of individuality.

Unlike Ascham, Vives believed in a moderate use of corporal punishment which: "I should wish him not to dispense lavishly but to reserve for special occasions". (Vives, 1913, p.119).

Ascham contended that some subjects best suit some children. Music, arithmetic, geometry, for example, are bad for "moderate wits" and over-study of them causes some wits, "moderate enough by nature, be many times marred". (Ascham, 1870, p.34). "Contrarywise, a wit in youth that is not over dull, heavy, knotty and lumpish but hard, tough and though somewhat

stiffish - such a wit, I way, if it be at the first well handled by the mother and rightly smoothed and wrought as it should, not overthwartly and against the wood by the schoolmaster, both for learning and whole course of living, proveth always the best". (Ascham, 1870, pp. 34,35).

He emphasised that considerable harm is done by faulty judgement of character and suggested, after Plato, "seven plain notes to choose a good witte in a child for learning". (p.38). The father is at fault for misjudging his child's ability but the schoolmaster is most at fault for taking no account of temperament in his treatment of the child. Ascham said with biting criticism:

"Commonly more care is had, yea and that among very wise men, to find out rather a cunning man for their horse, than a cunning man for their children". (Ascham, 1870,p.38).

He suggested that the two roles of the schoolmaster, "praeceptor in learning and paedagogus in manners" should be separated. In this way gentleness in learning and sternness in disciplining may be employed. This is in keeping with modern practice for even though psychological teaching on punishment has not been completely adopted in the classroom, it is noticeable that punishment is increasingly reserved for offences in conduct and not for omissions in learning.

Child Study

Erasmus, defining a 'characteristic peculiar to each personality which we may call individuality', suggested

means by which the teacher should observe this individuality 'in the early stages of child life, since we learn most easily the things which conform to it'. (Erasmus, 1904, p.196). However, with sound teaching the normal child of flexible mind can acquire most disciplines. This teaching should be begun at an early age for capacity to learn in very young children is shown by the way in which they can learn manners and conduct. "No age is too early in respect of that knowledge which Nature has fittingly prescribed for it." (Erasmus, 1904, p.198). Erasmus was suggesting observation as a means of understanding the individual. Elyot also emphasized child study:

"Firste to know the nature of his pupil, that is to say, whereto he is mooste inclined or disposed, and in what thyng he setteth his most delectation or appetite." (Elyot, 1907, p.24).

Mulcaster's "Positions" supported these ideas: Human nature may be considered to have three natural powers - wit, to conceive by, memory, to retain by, and discretion, to discern by, and the nurture of these powers is the job first of the parent and second of the teacher. The teacher is concerned to find what time is best for each child to begin learning.

He made the clearest statement of the principle of readiness to learn which can be found in educational writings before Montessori. It is not generalized to concern all children at a certain age, as the tendency is with many

curriculum builders today, but is specifically restricted to the individual.

Sir Henry Wotton considered it important to know the "capacities" of children but recognized that this is not as easy as it sounds and that misjudgment of children is easy and common. Parents overprize their children because of the affection they have for them. Others misjudge children out of charitableness; while slow development is likely to confuse judgment. In order to make a close estimate "whereby may be timely descried what the child will prove in probability", it is important to note the "characters" which will give clues to the child's capacity. He arranged these systematically into physical, mental and miscellaneous characteristics.

But it was Vives who began the systematic study of the individual and applied it directly to education. He insisted on the importance of understanding differences in scholars and of adjusting the work to fit the disposition. The first task is to determine the suitability of the child for education. The father is not able to do this as well as the teacher, for the former is likely to choose his favourite, rather than the child most likely to benefit from education. Vives recommended the school rather than the tutor because of the social stimulus. He emphasised the importance of the teacher in building the child's character and suggested that the teacher is more important than the parent in this respect. The teacher should make his first selection for education,

when, after a preliminary course in the foundations of piety, the masters should confer about the "natures of their pupils and consult about them. And let them apply each boy to that study for which he seems most fit." (Vives, 1913, p.62). These conferences should continue to be held "four times a year". Here is a ~~fort~~aste of case discussions as they are conducted in a few enlightened schools today. Vives suggested that, in order to determine what kind of teaching should be given to each pupil, their dispositions must be studied and that this is a matter of "psychological inquiry". (Vives, 1913, p.73).

Selective Education

Luther suggested selection procedures which were to take place after a period of universal primary education. These procedures would ensure that all those fitted for higher education would be given the opportunity.

"It is well that in all towns and villages good primary schools should be established out of which could be picked and chosen who are fit for the universities, out of which then the men can be taken who are to serve your land and people. If the towns or their citizens cannot do this, then it would be well to establish new stipends for the support of a few bright fellows in the deserted monasteries, so that every town might have one or two students. In the course of time, when the common people see that their sons can become pastors or preachers, and get other offices many

of those who now think that a scholar cannot get a living will again keep their sons in school" (Luther, 1913, II, pp.487-488) Huarte also urged King Phillip of Spain to set up a system of educational selection and a system of this kind was set up in Calvinist Geneva.

The Systematizing of Education

The "Progressive Education" of the Sixteenth Century emphasized individual techniques. Quick has summarized the main principles of this educational movement which combined humanist interest in Man with the Reformation concern for the individual:

1. The aim of education is to develop the faculties of body and mind
2. teaching methods should be carefully adapted to fit the mental constitution of the learner
3. teaching of very young children is most important and most skilled
4. children's brains should not be subjected to pressure
5. teaching should be done in the vernacular
6. girls' education is as important as boys
7. training of teachers is necessary to improve education (Quick, 1907, pp.92-93).

Education systems were built up on principles like these in Puritan England, e.g. the Petty Schools, and in France, e.g. the Port Royal Schools. Ironically enough perhaps the most

successful education system which developed along these lines and as a result of these two forces, humanism and protestantism, was that of the Jesuits. The Society of Jesus was formed as a counter-offensive to the Reformation and proceeded to adopt many of its principles. The aim of the Jesuit education was stated by Loyola himself:

"Not only to seek with the aid of the Divine grace the salvation and perfection of one's own soul, but with the aid of the same earnestly to labor for the salvation and perfection of one's neighbour." (Loyola 1950, p.151).

The Society was imbued with a sense of purpose and organised with military discipline. Only the best methods would suffice for the job which they considered all important, education. So they imbued themselves with the new education and applied it practically, retaining what they considered efficient. The new spirit of individuality was interpreted by them in terms of learning efficiency. Since the understanding of differences among their scholars was important, they would try to understand them. Since the encouragement of some differences led to better learning, they would encourage those differences. Thus, the first regulations prescribed by Ignatius himself contained instructions about discipline:

"Those who give trouble in class are first to be admonished with kindness, but if this does not prove salutary

and it is thought that severer admonition may be of help, they are to be turned over to the Corrector for punishment." (Loyola, 1938, p.73).

Nadal's Ordo Studiorum contains instructions upon the promotion of pupils which was to be done by public exercise at the beginning of each school year. A recommendation for class competition also appears.

"In all classes it will be well at times to hold a contest for the leadership of the class, either all or a selected group taking part in the competition." (Nadal, 1938).

Small prizes should be offered to incite students to study. On the other hand it was laid down that poverty or lowly status was not to be held against the pupil.

"Do not let any favouring of the higher classes interfere with the care of the meaner pupils, since the birth of all is equal in Adam, and the inheritance in Christ." (Sacchini, 1907).

It will be noted that the term "class" is used meaning a group of pupils. The division of schools into classes is a technique which originated in the Renaissance. The Jesuits took this further and organised their schools into grades approximately on the modern style with the total course of study divided into five progressive units. This was the Ratio Studiorum as it appeared in 1599. This technique was seen even in recent times as a method of coping with individual differences in learning. Selection of

talented students for courses of advanced studies took place in the Academies.

The Jesuits built up a highly efficient system of education based upon an interpretation of humanist ideas which was to persist with little change into this century. The suppression of the movement in the eighteenth century was due partly to the failure of the Society to alter their subjects from those of humanism to those of the enlightenment.

In order that the learning might be pleasant, the teacher in Jesuit schools was expected to study the character and capacity of each boy in his class and to keep records of each child. These records were expected to contain personal details and progress marks. Quick quotes from a Jesuit, Barbier, the following advice:

"You have everything to observe, the individual character of each boy and the general tendencies and feelings of the whole body." (Barbier, 1907, p.61).

By the middle of the sixteenth century the Humanism as a motivating force in education began to give way before a new spirit of enquiry which was to become the Scientific Movement. Sir Francis Bacon, if not the originator of this movement, was very much its interpreter. At first, the new ideas favoured the objective tradition of education since they stressed the acquisition of knowledge. The impact of science, however, could not be avoided even by those who, by temperament or early education, were committed to the subjective tradition. In time the scientific movement was

to give the subjective tradition a precision and a definition which would make it viable. The story of educational methods from the sixteenth century on, is the story of compromise between the two traditions ending in an efficient blending of them both.

Universal Education

The new ideas can be seen at work in the gradual adoption of the concept of general education. A true individual education cannot be achieved until all members of society are educated according to their potential.

Montaigne wished the state to be responsible for education although he was critical of formal, mass teaching:

"Those which according to our common fashion undertake with one self-same lesson, and like manner of education, to direct many spiritis of divers formes and different humours, it is no marvell if among a multitude of children, they scarce meet with two or three, that reap any fruit by their discipline, or that come to any perfection." (Montaigne, 1892, I, p.172). Sir William Petty considered that education should be universal:

"All children of above seven years old may be presented to this kind of education none being excluded by reason of the poverty and unability of their parents, for hereby it hath come to pass that many are now holding the plough which might have been made fit to steer the state." (Petty, 1906, p.211). Charles Hoole was concerned how: "a

multitude of various wits may be taught all together with abundance of profit and delight to everyone, which is the proper and main work of our ordinary schools".

While Milton supported:

"A complete and general education, which fits a man to perform justly, skilfully and magnanimously all the offices, both public and private, of peace and war."

(Milton, 1959, pp.518,519).

Comenius was another advocate of universal education:

"Not only are the children of the rich and noble to be drawn to the school, but all alike, gentle and simple, rich and poor, boys and girls, in great towns and small, down to the country villages. And for this reason. Every one who is born a human being is born with this intent - that he should be a human being, that is a reasonable creature ruling over the other creatures and bearing the likeness of his Maker." (Comenius, 1907).

Rousseau in his treatise to the Poles advocated for them a national education of the kind outlined by Plato:

"It cannot be left to the individual man to be sole judge as to his duties. Still less should children's education be left to the ignorance and prejudice of their fathers. The matter is of far greater concern to the state than to the fathers. The state abides the family passes." (Rousseau, 1956, p.184).

Regard for atypical children has been seen to

gather momentum from the end of the Middle Ages. Gerson spoke out for gifted children. Ascham for the slow learner. Hoole criticized the way in which children 'of slower apprehension' are scolded, and beaten for their inattention whereas 'if they had been taught in a way more agreeable to their mean apprehension' they would have been able to learn as cheerfully if not as fast as the quickest." (Barnard, 1862, p.196)

The Jansenists were very concerned with backward children. Describing Cyran, the leader of the Port Royalist educators, Lancelot says:

"He wished us to bear long with their faults and weaknesses, in order that thereby we might induce God to have mercy upon our own, and afterwards perhaps to strengthen these tender plants when they should learn what patience we had exercised in respect to them. He used to add that we ought to show special love and pity for those who appear most defective and backward - those, that is to say, whom original sin has most deeply wounded." (Lancelot, 1738, II, p.335)

Education is seen as carrying "the mind to the highest point that it is capable of reaching" (Nichole, 1714, p.277) which means that memory, imagination and intelligence in their final form are cultivated not implanted.

"Thus a master shows his skill by setting the pupils under his care to those tasks which are most congenial

to them. There are some children whose exercises should be practically confined to memory work because their memory is good and their judgment weak. There are others who should be set to tasks involving judgment because in them this faculty is stronger than memory." (Nichole, 1714, p.277)

Curriculum and Teaching Methods

Bacon was largely responsible for the emphasis, which appears in English education in particular, on curriculum, and formal training. The tradition was carried on by Locke who emphasized education as being a process of inculcation of knowledge and development of intellect. This laid stress on the subject matter of education and the discipline of each subject rather than the pedagogic skill of the teacher which was emphasized in the subjective tradition. Comenius, although classified in the subjective tradition through his idealistic view of human nature was very much influenced by the extensiveness of Bacon's vision. In his Pansophia he tried to epitomize the whole of human learning. He may be said to have initiated text-books - a mixed-blessing in the history of individual education. On the one hand, text-books have lent themselves most easily to formal mass teaching but, on the other, they have led to programmed instruction and the possibility of scientifically controlled individual education.

Montaigne developed the idea of natural education which had been advocated by Rabelais. He considered the most

successful teachers to be Nature, Youth and Health.

Education must not be overloaded with formal teaching nor must facts be poured into the child as if through a funnel. He advocated that the pupil should be allowed initiative, to speak out and to think for himself. He would have the pupils face real-life situations:

"Let him hardly be possessed with an honest curiosity to search out the nature and cause of all things; let him survey whatsoever is rare and singular about him; a building, a fountain, a man, a place where any battle hath been fought, or the passages of Caesar or Charlemagne." (Montaigne, 1892, I, p.163).

He spoke against harsh discipline and corporal punishment:

"I have seen no other affects in rods, but to make children's minds more remiss, or more maliciously head-strong." (Montaigne, 1892, II, p.71).

He blamed many of the idiosyncrasies of adults upon faults in their education and was very critical of mass education.

Charles Hoole, on the other hand, speaking of the Petty School says he was concerned how 'a multitude of various wits may be taught all together with abundance of profit and delight to everyone, which is the proper and main work of our ordinary schools'. Comenius in the "Way of Light", his method of universal education, advocated observation of nature. "Natural things must needs be taught, because they

are the visible mirror of the invisible majesty of God, and the key to many mysteries of holy scripture, and the ideas, forms and standards of our actions, if they are to be rational." (Comenius, 1938, p.6). Comenius was optimistic that scientific advances were making the possibility of complete understanding a matter of time only. Rousseau's name is more closely associated with education from and through nature than any other. In the *Emile* we have a manual of such an education suggesting that the child's intellect develops through his senses. The child must develop his senses through contact with his environment. Concrete experience is essential in the earliest stage and only gives way at the age of eleven to more abstract learning. This closely approximates Piaget's concrete operational stage and is a remarkable anticipation of modern theory.

It was Pestalozzi who translated Rousseau's theory into classroom practice. He also imbued this theory with a religious idealism reminiscent of Comenius.

"I am convinced that when a child's heart has been touched the consequences will be great for his development and entire moral character." (Quick, 1907, p.298).

This illustrates his faith in the power of love to transform the individual child. In "Leonard and Gertrude" Pestalozzi stated that reading and writing are not the whole of education, "It is well and good for them to learn something, but the really important thing for them is to be something." (Pestalozzi, 1885, p.152).

Although he placed great emphasis on nature's role in learning he did not underestimate the part that the teacher has to play. Nature is blind. It is the teacher's job to guide the child's growth according to the aims of education. The teacher should be guided by a science of education, but although the principles on which the guidance must take place will become clear, the teacher's method must remain individual. Each teacher must adapt his approach so that it fits his own individuality. In the same way the individuality of the child must not be neglected and the teacher should make his method suit the pupils rather than his pupils fit the method. He believed in equality of treatment for all pupils but this does not mean that all children are capable of completing the same work at the same time.

"We recognize only one principle of procedure - that which whilst it is in complete harmony with the development of the mind, is based upon the nature of the subject matter. This is of course constant for all children who study the subject; the only difference is that a clever child gets through the course much more quickly than a dull one. The dull boys may only complete a few stages, whilst the clever ones obtain a complete and commanding view of the whole subject." (Pestalozzi, 1913b, p.346). He considered that the nature of the child should be decisive and that courses should be adapted to the boys not the boys to the courses. Since this was rarely considered in education,

since little account of individual readiness was made, it was no wonder that teachers and pupils were in despair and that education hindered progress rather than advancing it. It is a principle, said Pestalozzi, that the teacher aims at an increase in the powers of his pupils rather than an increase in their knowledge.

"Learning in youth should always be a spontaneous process, a result of free activity, a living and original product." (Pestalozzi, 1913b, p.349).

Special Education

As we have seen, interest in atypical children grew with the Renaissance. Progress in the education of blind, deaf and retarded children developed in that order and some attention was also given to gifted children. Generally, institutions caring for the bodily needs of handicapped children preceded attempts to develop methods of teaching them, and schools came last of all.

Institutions for the blind are recorded since the fourth century, particularly in France. In 1260 Louis IX founded the Hospice des Quinze-Vingts in Paris and this continues today.

In the sixteenth century letters engraved on wood were used to teach reading to the blind. In the seventeenth century lead type, cast metal and card-board letters were used. In the eighteenth century Hauy invented raised print, embossed on paper, and taught twelve pupils to read. He

founded the Institute Nationale des Jeunes Aveugles in 1784 which was the first school for blind children. A school for the blind was opened in Liverpool in 1791 and within the next twenty years schools opened in London, Vienna and Berlin. The first British book for the blind was printed by Gall in 1827.

In 1832 the New England Asylum for the Blind was opened under the superintendence of the phrenologist, Samuel Howe, and the following year books were published by both Fredlander and Howe himself. Louis Braille invented his system of dots which provided for the blind, an easy method of writing. Descriptions of his work were published in 1829 and 1837 and his method was gradually adopted. Throughout the nineteenth century, education for the blind became established in Europe, North America and Australia.

Education for the deaf began much later. In Spain in the sixteenth century Pedro de Ponce successfully taught several deaf pupils to read and write. In 1620 Bonet wrote the first book on the teaching of the deaf, describing the methods of Ponce. In Britain in 1654 Buliver wrote on methods of teaching the deaf to speak and read lips. Other early British educators in this field were Holder, Wallis and Dalgarno. In the eighteenth century Pereira, the inventor of a sign language for the deaf which used only one hand, visited London and was made a member of the Royal Society. He went on to Paris and had a great influence on Van in of the Congregation of Brothers of Christian Instruction

who had attempted the education of two young sisters, both deaf-mutes. Vanin was succeeded on his death by the Abbé Charles-Michel de l'Epée, a Jansenist, who taught the girls by using pictures. Epée, with Sicard, developed the manual alphabet of Pereira into a system. It was believed that the language of signs was the vernacular of the deaf and that it was not possible for them to express ideas directly in writing. Their speech was purely mechanical and had little relation to intellectual activity. In 1755 Epée founded a school for the deaf and in 1791 this became the Institution Nationale des Sourds Muets.

In Germany Heinicke had emphasized the oral education of deaf children and Hill in the nineteenth century developed the oral method of instruction, as opposed to the manual or 'silent' method and this technique gradually became accepted. The first British school for the deaf was opened in Edinburgh by Thomas Braidwood and by 1870 there were nineteen residential institutes. In 1876 a Yorkshire institution began the new German oral method and this became general. In 1837 Laura Bridgman, a blind, deaf-mute was enrolled in Howe's school for the blind in Boston. The success of her education led to the acceptance of other cases of this extreme of handicapping. Helen Keller's personal success tended to overshadow the case of Marthe Obrecht in France which preceded it and the final triumph with Marie Heurtin who was blind, deaf and dumb from birth.

In 1837 Alexander Graham Bell opened a school in

Boston for training teachers of the deaf. His invention of the telephone also led to deaf-aids and other electrical equipment which was to revolutionize the teaching of the deaf.

Concern for the mentally handicapped developed very slowly. Cretinism had received some notice in Switzerland from the sixteenth century but it was the publication of Itard's, "The Wild Boy of Aveyron, in 1801, which brought the mentally handicapped before the public view. The publicity which surrounded Itard's five year experiment to reclaim an idiot boy who had been deprived of all human contact began the development of a public conscience. This coincided with the Revolutionary concern for 'fraternité' and Pinel's unchaining of the insane.

Seguin followed Itard by founding a school for the mentally handicapped in Paris. His methods were based on the individual analysis of the physiological and psychological characteristics of each child. Later he went to America and taught and published in the field of mental retardation. In 1820 in Hartford, Connecticut, successful teaching of idiots had taken place in a school for the deaf and in 1848 Howe attached a class for training idiots to his school for the blind in Boston.

In the meantime institutions had been founded in Germany and Britain and the application of physiology and phrenology to the problems of educating the mentally handicapped continued. Co-ordination of hand and eye was

stressed and hand work formed a major part of the curriculum. The first real development of Seguin's methods was made by Montessori at the end of the nineteenth century. She invented a series of sense-training materials with which the child worked individually. Through this material she taught some retarded pupils to read and write so well that they were able to pass a public examination. Montessori proceeded to adapt her methods to ordinary children but she had a considerable effect on education of the mentally handicapped at that time.

Decroly, in Brussels, followed rather similar lines but developed educational games in a natural setting rather than didactic material like Montessori. His methods were rather more widely accepted than those of Montessori although a tendency to return to more didactic material, e.g. Cuisenaire apparatus, is observable today.

Binet developed his tests originally as a device for distinguishing mentally handicapped from normal children. The value of the intelligence test in accurate screening and diagnosis of mental retardation cannot be underestimated.

Thus by the beginning of the Twentieth Century a system of schools for the blind, the deaf and the mentally handicapped had developed in all the bigger centres of population. There was some opposition from Utilitarians like Spencer, who was not only cautious about the power of

education to improve nature but opposed 'sentimental philanthropy' for, he said: "To feed the incapables at the expense of the capables this is to accumulate a reserve of misery for posterity". (Compayre, 1908, p.113). This attitude towards special education is not entirely absent today.

Interest in gifted children was, as might be expected, less specific. The phrenologists as usually were in the run. They favoured measurement to determine capacity and readiness and gave advice on the management of precocious children: They told the teacher, "To permit the precocious child to engage in no mental toil until its body becomes sufficiently developed and matured to spare without injury the necessary force which such labour requires". (Thraillkill, 1870, p.381).

Rosenkranz distinguished three levels of intellectual capacity: 1) incapacity or the lack of all gifts, 2) mediocrity and 3) talent and genius. Genius differs from talent in that it reveals itself more obviously and fixes itself on its object. The precocity which accompanies both talent and genius presents a problem. By precocity he meant unequal development in which the child does not mature evenly in all aspects, physical, social and moral, as well as intellectual. Education must ensure that there is no forcing of talent nor neglect of important learning. Bain also spoke of difference in intellect and particularly of superiority in intellect. Terms like 'clever',

'able', 'gifted' and 'intelligent' testify to the general recognition of the endowment. He went on to suggest careful child study, including phrenology, to determine the actual capabilities of the child.

Child Study

Continual reference to the need for teachers to study their pupils was made during the nineteenth century. Herbart, for instance, insisted that the teacher must study the child's capabilities before beginning education. He gave detailed instructions on how to organize this observation (see p.172). Rosenkranz suggested that, whenever undesirable characteristics should appear, the instructor should try to seek out their cause lest they arise "from some real needs of the youth which in their development have only taken a wrong direction". (Rosenkranz, 1876, p.29)

Although child study was basic to the Montessori Method of education she saw the purpose of it in a different light. The child's environment had to be structured in such a way that he himself would reveal his needs. She was concerned with experiment, with letting the children lead so that she might follow their way.

"There is a secret in the soul of the child, impossible to penetrate unless he himself reveals it as little by little he builds up his being". (Montessori, 1936, p.18) Therefore the educator had to observe closely so that the

environment could be continually restructured to fit the developing needs.

The modern child study movement is a branch of psychology (developmental psychology) in which observation of behaviour and physiological measurement combine. Darwin himself began it with a daily record of a child's behaviour. Preyer produced the first book on child psychology in 1881 and the founding of the Pedagogical Seminary in the U.S.A. in 1891 and the British Association for Child Study in 1893 really launched the new study. From the beginning, there was an awareness of the educational aspects and an attempt to present the data in terms meaningful to the classroom teacher. There was a tendency towards generalization, and frequently the individual was lost in the general picture. Montessori came under criticism from the child study movement, for instance, because her didactic approach did not fit in with the Freudian picture of the child which was favoured. In the work of McGraw and Gesell, Buhler, Valentine, Piaget the child study movement came of age and, as it did, the individual again came into prominence.

Curriculum

Ever since the senses became a legitimate area of study there had been a school of thought which emphasised sense experience in education and criticized the excessive verbal and literary content of conventional education. Pestalozzi had made this 'education through the senses' a

practical proposition and one of his students, Froebel developed it into a complete system. The child unfolds naturally in conditions of freedom. The method by which this unfolding takes place is through play so that the main principle of education is continuous self-activity. In this activity the child internalizes his environment through sense-experience and achieves unity with society.

This meant that the Froebel kindergarten was concerned with both individual and group activities. Great emphasis was placed on fairy stories since these fitted in with Froebel's conception of development in stages corresponding with racial progress. Activities based on Pestalozzi's object instruction were developed. These "gifts and occupations" were limited in range, formal in application and were valued for their symbolic qualities. Art and music were considered to be two of the most important channels of self-expression. They were assumed to be equally important for all children and there was no recognition of the fact that children vary as much in their aptitude for art or music as in any other aptitude. The art work was very formal because of the value placed upon symbolism. Social experiences were important but even in these the formal structuring of the activity appears since the children sat in a symbolic circle and played games of symbolic meaning.

It can be seen that free activity to Froebel was not the "free activity" of our day. The children were free

along well-defined paths and their activity was structured carefully to fit in with a particular theory of development. In practice the Froebel kindergarten was both more and less formal than its originator intended. The gifts and occupations were applied by many subsequent teachers in a mechanical and unthinking way. On the other hand, Montessori had a great influence on the Kindergarten movement and caused a greater emphasis to be placed on actual individual work.

Montessori also stressed sense-training but she gave no consideration to the symbolic aspects that had been stressed by Froebel. To produce direct training of the intellect through sense experience Montessori designed special apparatus which formed "a comprehensive and scientific scheme for formal gymnastic of the senses" designed to "develop piece by piece the pupils mental capacities". (Holmes, 1912, XXI and XXII).

The apparatus consisted of weights to be graded in order, shapes to be fitted into form boards, colours and texture to be matched, sounds and tastes to be identified. Montessori emphasised the individual nature of the child's experience since all children become ready to profit by the experience at different times.

Throughout the school-day, the teacher circulated quietly among the children or sat in a central position so that they could learn to come to her for assistance. Free

choice was an important principle. The children picked their own apparatus and the directress tried to ensure that they learned self discipline in their choice of activity and their persistence with it. Social training was important and, here again, firsthand experience was stressed with such activities as house-cleaning, cooking and gardening. Here the group appears to be the natural unit and group-teaching was the rule.

Summarizing the differences between the Froebel and Montessori methods Holmes says:

"Whereas Montessori children spend almost all their time handling things, largely according to their individual inclination and under individual guidance, Kindergarten children are generally engaged in group work and games with an imaginative background and appeal". (Holmes, 1912, XXVI)

Although the Montessori Method was more directly an 'Individual Education' the Kindergarten Movement was very important in fostering a concern for individual pupils and helping education to move away from formal literary instruction. There were many systems of education in the late nineteenth and early twentieth century but only Froebel and Montessori produced curriculum changes which favoured the individual.

Individual Methods

Alongside curriculum changes which helped education to cater for the individual there was a development of

attitudes and techniques which contributed to the same goal. Herbart, for example, suggested the minimum of supervision over pupils for "How can a human being take root in himself when he is not allowed to depend on anything, when you do not permit him to trust a single decision to his own will." Although this suggests that Herbart placed great emphasis on pupil responsibility he did not completely exclude supervision which he felt to be especially necessary with small children and in times of danger. Over-supervision he said, causes lack of originality and confidence and the need for supervision increases with the degree to which it is used. On the other hand "Education is a vast whole of ceaseless labour, which exacts true proportion from beginning to end, merely to avoid a few errors is of no avail". (Herbart, 1897, p.98)

Child government depends, not on punishment which involves risks both from strong natures who despise threats and weak natures who are too weak to be impressed, but from authority and love. Authority belongs to the father and love to the mother and so government is best left to the parents. The teacher must work in co-operation with the parents. Discipline gives no trouble when each individual pupil is kept busy at work which interests him. It is in a classroom climate like this that individual instruction can flourish.

Bain, too, criticized certain aspects of education which hindered the growth of the individual. For example in criticizing reward as a form of motivation in school he says:

- " 1. it is an anti-social principle;
2. it is apt to be too energetic;
3. it is limited to a small number;
4. it makes a merit of superior natural gifts."

(Bain, 1889, p.112).

He feels that it would be desirable if "a more moderate pitch of excellence, such as benefits average faculties" could be attained and that pupils of higher ability should be encouraged to be modest rather than self-assertive.

Froebel suggested play as the means by which the individual pupil could be allowed to unfold naturally in a manner analagous to the growth of plants. He repeatedly urged that "all prescription should be adapted to the pupil's nature and needs, and secure his co-operation," (Froebel, 1909, p.14), but his play was largely group play and was structured to an extent that made it ~~very~~ different from the 'playway' of Caldwell Cook.

He insisted that children be allowed to work as individuals at the work to which they were best suited, but it is apparent that he considered that discrepancies in the child's nature were unimportant compared with the essential similarity of his inner organisation.

Montessori's children actually did work as individuals - auto-education was the term she used. Freedom was stressed continuously, freedom of choice for the child, freedom of the environment. The environment must be free, not in the sense that there is no direction (note the term 'directress' instead of 'teacher') or organization, but that there is no compulsion, no attempt to force the child to follow the same activity as the rest of the class. Only when the education is free does the child have room to grow, only then can we be sure that each child grows in accordance with his own pattern of development and making full use of the sensitive period. Believing firmly that there is a critical period in every learning task Montessori believed that the environment must be organized so that, as each individual becomes ready, the means are available for his success in the new task.

Montessori began her first school at the beginning of the twentieth century and her educational work persisted into the nineteen fifties. She was the first to design a truly individual education and, to this date, no other method which safeguards individuality in the way her system does has been demonstrated.

CHAPTER VIII

THE CONTEMPORARY POSITION OF THE CONCEPT OF INDIVIDUALITY

A. The Philosophical Dimension

In the Twentieth Century, the classical metaphysical positions have been maintained although disguised by different names and, frequently, by different terminology. Many of these philosophies have been applied directly to education and may be assessed with regard to their attitude to the individual.

In the direct tradition of classical realism are such schools of educational philosophy as Perennialism and Essentialism which emphasize the nature of the learning process rather than the nature of the learner. The first of these stresses the permanence of human nature, the permanence of human knowledge and, therefore, the permanence of human education. It is deemed necessary for all children to follow the same curriculum which has been based on the cultural fundamentals as embodied in the Great Books. The second of these schools of thought emphasises the importance of the teacher in the learning act and the necessity of mental discipline. Both are essentially anti-individualist although essentialism agrees that the individual must be helped to realize his potentialities. It is felt, however, that this development must take place within the framework of a traditional curriculum. To the perennialist, the denial of individuality in education is more explicit:

"Education implies teaching. Teaching implies knowledge. Knowledge is truth. The truth is everywhere the same. Hence, education should be everywhere the same."

(Hutchins, 1936, p.66)

Opposed to this kind of thinking, and originating directly from the pragmatism of the early twentieth century and indirectly from the idealism and naturalism of the nineteenth century, is Progressivism. Here great emphasis is placed upon the individual child and education is said to be actively related to the interests of the child and to be aimed at the realization of his potentialities. Careful study of each child is advocated so that the best way of educating him may be discovered and child-centred schools are set up where pupils may learn by doing rather than by being told.

With Dewey the progressive movement made an alliance with social theory and, "With the onset of the Depression, progressivism swung its weight behind the movement for social change, thus sacrificing its earlier individualism for an emphasis on 'co-operation' and 'democracy'." (Kneller, 1963, p.99) It is in this social, rather than the individual form, that progressivism influences education today.

This movement has been especially identified with American education and has recently been blamed for most of its shortcomings. It seems doubtful, however, whether progressivism in U.S. education ever got much further than schools of education. In one recent study, the author suggests,

in fact, that 96 per cent of U.S. schools are "subject" rather than "child" centred. (Cronbach, 1955, p.207) Another study, (Timmerman, 1956), puts the figure at 84 per cent. It would seem that British schools, at least at the elementary school level, are more committed to progressivism than in those in the U.S.A. - and this in spite of statements to the contrary by perennialists like Rickover. ("American Education, A National Failure and Why British Schools are Better." Rickover, 1963)

A modern philosophy, without a specific educational programme, but with a strong line on the individual, is Existentialism. This is no clear-cut school of thought but the expression of a similar outlook sometimes in religious, sometimes in secular language:

"Existential philosophies are concerned with the manoeuvres of existing individuals whose being is ambiguous (both bound and free, separated and joined) in a total existence which is ambiguous (finite and infinite, end and means, a plenitude and nothing)." (Blackham, 1959, pp.153-154)

The thinking individual is the origin of all thought and this individual is essentially free. The existentialists stress the need for complete involvement - involvement in pain, in boredom and in suffering as well as in excitement, joy and happiness. What is important is the unique experience of the unique individual and education must aim to provide the setting in which this experience can take place. Education should give the individual the

opportunity to be responsible to himself and to live his own unique first-hand life and not a second-hand inherited life.

An education based on existential philosophy would put the onus firmly on to the individual. It would expect the individual to make his own discoveries and in doing so discover himself. Against a criterion like this the achievements to date towards an education of the individual seem very meagre.

(B) Psychological

In the Twentieth Century the psychology of the individual has become firmly established as a legitimate subject of study. On the other hand, while considerable research has taken place into the psychology of the individual, there has been no development of a separate Individual Psychology. In fact this very term, was appropriated early by Wundt as a term to cover the whole of psychology and by Adler, later, to describe his particular branch of psycho-analysis. The actual study of the individual has taken place within such varied disciplines as personality study, psycho-analysis, differential psychology and child psychology. Allport (1937, p.7) has listed eight approaches to the study of the individual within the science of psychology: differential, psychology, psychography, psychoanalysis, typology, Gestalt psychology, the psychology of Verstehen, purposive psychology and personalistic psychology. All of these, he says, have

arisen in protest against the prevalent neglect of the individual.

The study of personality includes many of these approaches. The concept of personality has been defined by Allport in these terms:

"Personality is the dynamic organization within the individual of those psycho-physical systems that determine his unique adjustments to his environment." (Allport, 1937, p.48) Forty-six different usages of the term had been noted by Allport at this time but his definition has been widely used. By the first quarter of the twentieth century, "Personality study came, then to be a rather sophisticated type of case analysis based upon a search for all material capable of throwing light on personal development." (Murphy, 1969, p.620)

The constitutional approach which had persisted through the centuries from the time of Hippocrates, re-appeared in Sheldon's attempts to link physique and temperament. He developed a technique of photography and measurement by which he was able to analyse the physique of thousands of subjects. He isolated three basic components, endomorphy, mesomorphy and ectomorphy based respectively on fatty tissue, muscle and bone structure. These components are present in every person to differing degrees and may be represented as ratings, 1 to 7. The three figures which result represent the person's somatotype. This has proved to be a useful means of classifying body type. (Sheldon, 1940)

Alongside this, he has classified human temperament on three similar dimensions, viscerotonia, somatotonia and cerebrotonia. Those predominant in viscerotonia tend towards relaxation, love of physical comfort and sociability. Those who are somatotonic tend towards assertiveness, love of power and risk, while the cerebrotonic has a tendency towards restraint, introversion, love of privacy and solitude, and inhibition. The individual can be rated on these three components, in a similar way to the body typing, to obtain a temperament type (Sheldon 1942) and the two types, somatotype and temperament type, are said to correlate highly.

If this correlation were to be proved Sheldon's technique could be a useful method of establishing temperament. The ratings of temperament, however, appear to have been open to 'halo' effect and the initial physical rating seems to be, at least at present, rather difficult to determine. Another criticism is that the initial abstraction of the three temperament components seems to have been based upon too few cases, so that the approach has not had the success which it seems, on the surface at least, to deserve.

Basically Sheldon's approach is a typology. "Sheldon's system, although superficially expressed in dimensional terms, nevertheless displays this fundamental property of typologies". (Anastasi, 1958, p.178)

Other approaches to personality through typologies include psycho-analysis. The most important single influence on the psychology of the individual may be attributed to

Freud. This influence has been a complex one and has generally been felt indirectly. Allport has suggested that "psycho-analysis fails to fulfill all the requirements of a science of the individual". (Allport 1957, p.12)

He gives these reasons:-

- 1) its pre-occupation with general causes
- 2) its doctrinaire approach
- 3) its lack of contact with other branches of psychology.
- 4) its unwarranted transfer from psycho-pathology to normal psychology
- 5) its over-emphasis on unconscious motivation.

To Allport, psycho-analysis, although dealing with individuals, attempts to fit each of them into its conceptual framework. This, he considers does not do justice to the richness of individuality. Eysenck has criticized, in turn, both psycho-analysis and this ideographic attitude of Allport which he says, is unscientific (Eysenck, 1952, p.18) There does, however, seem to be some justification in Allport's criticism. Adler, for example, has said "We do not consider human beings as types, because every person has an individual style of life", (Adler, 1937, p.775) and yet he himself has formulated a typology. Again if we look at Freud we can see that essentially he opposes the view of man expounded by Rousseau. Man, is not, of his nature, good, the unsocialized man is anarchic, destructive. The restraint put

upon him by society, by his own need to be part of that society, raise him above the level of the beasts. On the other hand, too great a submergence in the group will dissolve these restraints and allow unconscious desires to rise to the surface, "all their individual inhibitions fall away and all the cruel, brutal and destructive instincts, which lie dormant in individuals as relics of a primitive epoch, are stirred up to find free gratification" (Freud, 1953, XVIII, p. 79). The individual needs society for his full development but society needs free thinking individuals. This view of Freud's thought is expressed well by Rieff (1960 p. 329).

"Freud speaks for the modern individual elaborating his sense of separateness from the world and from even the most beloved object in it ----- in default of other cures, egotism suits the age, and Freud's is only one of the most successful and certainly the most subtle, of contemporary ideologies of self-salvation." A contrary view of Freud's influence has been expressed by some sociologists. Whyte (1960) suggests that the modern emphasis on adjustment, which he traces to psycho-analysis is responsible in part for a growth in conformity and the resulting submergence of the individual. Lapiere goes further, he sees the way of life upon which modern society is built, a way of life motivated by the Protestant ethic, as threatened by a new ethic which he calls the "Freudian ethic". The Protestant ethic

had seen "the human individual as physically, mentally and morally sturdy. Being sturdy, he is self-reliant and being self-reliant he is also responsible" (Lapierre, 1960, p.4). While Whyte had blamed the disruption of society on "scientism, belongingness and togetherness", Lapierre considers it to be caused by the Freudian doctrine which sees man as "a weak and irresolute creature without the stamina to endure the stresses and strains of living" (Lapierre, 1960, p. 60). Governments, he says, have gone over more and more to the Freudian view that man is individually incapable of assuming responsibility for his own welfare. He lists the increases in welfare facilities, the permissive home, the progressive school with its permissive programme, the "adjustment motif" which favours the course of least effort and the condonation of crime as expressions of the Freudian doctrine.

Inevitably, he feels, these practices lead to the decline of individuality. While it might be possible to justify an attack upon Freud as an anti-individualist, this particular attack seems to have substituted vehemence for verification. Lapierre has tried to lay at Freud's feet a list of ills, real and fancied, which should more properly be the responsibility of society as a whole. It seems difficult to disassociate Freud, Freudianism and psycho-analysis from the general trend of history. Perhaps the origin of Lapierre's "Freudian ethic" could be found, not in Freud, but in Darwin or perhaps, even further back, in the very Reformation which began that Protestant ethic which he has

set against it.

The empirical approach to the individual had its modern counter-part in behaviourism which, by emphasising the importance of objectivity, and reducing behaviour to stimulus and response built up a method of research and an approach to psychology, which has had an important influence on the study of personality. Typical of present day behaviourists in the field of personality is Eysenck. He criticizes the ideographically-minded psychologist whose battle-cry is the "uniqueness of the individual". He explains "To the scientist, the unique individual is simply the point of intersection of a number of quantitative variables" (Eysenck, 1952, p. 18). He emphasises the importance of establishing general laws and of measuring personality along dimensions determined by factor analysis. His approach to personality takes in a wide range of scientific investigations in the field of psychogenetics, psychopharmacology, psychodiagnostics, psychometrics and psychodynamics (Eysenck, 1960). Another who approaches personality from a dimensional point of view is Cattell (1946) who has used factor analysis to distinguish traits both "Surface" and "Source".

Gestalt and Field Psychology

Representative of that view of man which has opposed the atomism of empiricism and associationism is Gestalt Psychology which holds that behaviour cannot be abstracted from the total setting. The whole pattern of interaction must be studied.

The most important extension of Gestalt psychology into the study of personality is in the direction of field theory. Lewin, chief exponent of this theory, argues that psychology is over-dominated by Aristotelian modes of thought which consider lawfulness and individuality to be antitheses. General laws, when they are arrived at, are strictly dependent upon historic-geographical factors and as such lose much of their generality. He suggests that psychology needs to make the transfer to Galileian concepts in which regularity is not a criterion of lawfulness and the individual case can be treated lawfully. "Instead of a reference to the abstract average of as many historically given cases as possible, there is a reference to the full concreteness of the particular situations." (Lewin, 1935, p. 31). A dynamic approach to the study of personality is necessary but one which is conceived along Galileian modes of thought.

This he feels will develop in the near future in the same way as it has in physics. Although most concerned with environmental forces, Field Theory considers the somatic forces as well "The actual behavior of the child depends in every case both upon his individual characteristics and upon the momentary structure of the existing situation". (Lewin, 1935, p. 71). Behaviour is physics: force, vector, valence, equilibrium and represented by mathematical terms and diagrams. "What a thing is, at any time, depends upon the total situation and the momentary condition of the child involved. Similar

considerations hold also for the social factors. . .

In this dependence there becomes clear a matter of fundamental psychological importance, namely, the direct relationship between the momentary state of the individual and the structure of his psychological environment" (Lewin, 1935, p. 76).

In such a theory of personality habits, disposition, infantile experiences and the longitudinal approach in general tend to be neglected in favour of the "momentary state of the individual". Although derived in an opposing tradition this appears very close to Hume's 'bundle of perceptions'.

The Contribution of Anthropology and Sociology

Influences from outside psychology upon the study of the individual have come from cultural anthropology and sociology.

Cross-cultural research has provided a means of identifying within particular cultures the conditions which lead to the development of specific personality characteristics. This has enabled investigation into the universality of human characteristics. Studies have been published on the subject of adolescence (Mead, 1928, 1930), competition and co-operation (Mead 1937), aggression (Hallowell 1953), Oedipus Complex (Eggen 1953) masculine and feminine characteristics (Mead, 1950), sibling rivalry (Henry 1953). Such studies have demonstrated the importance of the cultural environment in determining personality and have hastened a move away from

assumptions about human nature based on a belief in a universal human nature.

It has been shown that concepts of time, space and distance, that memory and aesthetic taste, that concepts of right and wrong and even our very modes of thinking are culturally determined. For instance, in checking the existence of stages in the development of children's thoughts which had been described by Piaget (1929 and 1930) and which had been assumed by him to be genetic in origin, Dennis (1943 and 1951), demonstrated that Hopi children did not pass through the same stages and he suggested that Piaget is describing culturally imposed thought patterns rather than genetically determined stages. Cultural anthropology has demonstrated that the forces which shape the behaviour of an individual are those of the culture in which he grows up and that these are acting upon a raw material which is the result of both heredity and the intra-uterine environment. The individual is, at the same time a member of the human race, a member of a complex culture and a unique biological entity. Unless each of these aspects is kept in mind we have no hope of understanding individuality.

The trend in social psychology has been away from study of the group through the individual and towards the study of the individual through the groups. An early text in social psychology (Ellwood 1917) after defining human nature as "innate endowment" says, "We cannot understand human society unless we understand human nature." A more modern text deals

specifically with Human Personality (Pt III) and states "social psychologists (have taken) as their problem the study of the relationship between the individual human being and his society" (Lapierre and Farnsworth, 1949, p.8). This psychologizing of social psychology may be attributed, in part at least, to the influence of Gestalt.

In the same way that an acquaintance with primitive man and primitive society can help to give a new frame of reference in which to study the individual, a study of the social institutions which man has developed and which form the most important part of his environment, is essential to the proper understanding of the individual. Social psychology has provided this study and we find investigations into the influence of sub-cultural groups e.g. (Connell, Francis & Skilbeck, 1957), social class, status and role, e.g. (Linton, 1945) and group membership, e.g. (Lewin, Lippitt and White 1939) on the development of personality. Socially determined behaviour such as prestige, status-seeking, prejudice and stereo-typing, e.g. (Katz and Braly 1935) have all been studied intensively. Social measurements have been designed in such forms as sociometric tests (Moreno, 1955), social maturity tests (Doll, 1953), Social Class Identification (Sims, 1951), and Index of Status Characteristics (Warner and al, 1949).

Three large scale Australian studies involving interview, questionnaires and tests have mapped some of the social relationships in Australian communities and give considerable help to the study of the personality in this

country, (Oeser and Hammond, 1956, Oeser and Emery 1954, Connell, Francis and Spilbeck, 1957). The writings of Dewey, a social psychologist and an educational philosopher, tend to connect the individual in society to the individual in education.

Nature Versus Nurture.

Free Will as a psychological study ceased with James, but investigations into the relative importance of heredity and environment continued into the twentieth century. Sometimes this burst out into controversy. Examples of such controversy in the educational area may be found in 'Determinism in Education' (Bagley, 1923) and in the Thirty-Ninth Year Book (N.S.S.E., 1940).

Bagley sets out to refute some current opinions on education. The first of these opinions is that heredity renders 70% of the population incapable of benefitting from education and the second is that intelligence is completely hereditary in origin and that the chief purpose of the school is selection since it sifts each year through meshes of larger and larger size those who are less capable, retaining those who are marked for intellectual success. Bagley sees the issue as a social one with the hereditarians as determinists who wish to set up a meritocracy and the environmentalists as democrats and humanitarians. It is interesting to observe that Soviet policy also sees the issue in this light, difference in intellectual endowment is ignored, gross mental deficiency is considered as due to brain lesions and other differences

Test Administered	Coefficients of Correlation	
	Twins	Siblings
"A" test	0.69	0.32
Word test	0.71	0.29
Opposites test	0.90	0.30

Figure No. 6. A Comparison of Coefficients of Correlation Calculated on the Test Performance of Twins with Those Calculated on the Performance of Sibling Pairs. (Thorndike, 1905)

are said to arise from the environment.

Bagley sets out the case for an environmental view of intelligence. He states that, while intelligence is clearly dependent to some extent on physiological function, and is, to that extent, determined through physical heredity, it is equally determined by environmental opportunities. He particularly emphasises systematic schooling which he considers to be equal to the combined contribution of native endowment and informal pressure. While Bagley leans too far away from heredity, his position is closer to modern views on intelligence (e.g. Hunt, 1961) than the views of the extreme hereditarians.

One of the techniques used for estimating the comparative importance of heredity and environment has been the twin study. This was initiated by Galton and was combined by Thorndike with Galton's correlation technique in a study of fifty pairs of twins. He calculated coefficients between twins and between sibling pairs and reported much higher correlations between twins than siblings (See Figure). As the genetics of twins was improperly understood at this time, his sample probably contained fraternal as well as identical twins. He concluded, "In the actual race of life, which is not to get ahead, but to get ahead of somebody, the chief determining factor is heredity." (Thorndike, 1905, p. 553)

Another important twin study was carried out by Gesell (1922). His subjects were a pair of highly intelligent girls. He compared them on twenty-five mental and educational

tests and showed the amazing correspondence, not only in total scores, but in actual responses. He concludes, "the consistent similarity between these two children is based upon a fundamental, inherent similarity in endowment. It would, however, be wrong to ignore the equalizing influence of a practically identical environment. Indeed, in studying the development of personality, it is rather artificial to bring nature and nurture into rigid contradistinction." Although Gesell was to remain firmly on the side of heredity he points out quite clearly the futility of trying to separate the two sets of influences. Medical research indicated the division into fraternal and identical twins and another study (Merriman, 1924) demonstrated that the division held psychologically as well as biologically. Like-sex and unlike-sex twins were distinguished and correlations between like-sex twins were demonstrated to be significantly higher than those of unlike twins.

Gesell and Thompson (1922), in a classic experiment, used twins as experiment and control in stair-climbing and grasping while McGraw (1935) taught one twin to roller-skate and to climb and then compared him with his untrained brother. These studies gave evidence of the importance of maturation in the development of the child and were used as ammunition by the hereditarians.

Woodworth (1941) reported on current twin studies in the light they throw upon nature v. nurture. He concluded that, though extreme environmental differences may produce substantial differences in intelligence, the environment of

most children is sufficiently alike to make heredity the chief differentiating factor. A factor-analysis of data from twin studies (Blewett, 1954) suggests that the second-order factor (g) derived from Primary Mental Abilities Test scores is largely genetic in origin. On the other hand the chief group factors making up intelligence were found to vary considerably in their genetic component. Verbal and reasoning ability appeared to be largely inherited while number and spatial ability are much more readily educable and individual differences in speed appear to owe little to heredity.

Hereditarian views on racial differences came under scrutiny at the same time and the evidence came out firmly against them. Bruce (1940), for instance, discussed the whole question in some detail and demonstrated that naive explanations in terms of either heredity or environment are just not possible.

Some of the most important evidence came from studies on the effect of schooling upon intelligence. Such studies were frequently focused on the pre-school and most stressed the improvement in intelligence scores made as a result of such schooling. Goodenough and Maurer (1940) among others, criticized the statistical assumption made in these studies and suggested that the improvements in I.Q. were the result of the factor of regression rather than educational stimulation. A classic study of educational deprivation (Wheeler, 1942) compared the intelligence scores of Tennessee Mountain Children

in 1930 and 1942. In each year average I.Q.'s decreased from Grade I to Grade VIII, indicating, Wheeler concluded, that lack of environmental stimulation caused an increasing handicap when these children were compared with city children. Scores in 1942 were consistently higher than those in 1930 and this was attributed to improvements in education during these years. An ex post facto study reached the conclusion that "schooling up to the stage of junior secondary school with leaving certificate or higher, raises the I.Q. by 5-7 points. Those who do not receive any further theoretical schooling beyond the primary school stage, show on an average, a slight regression of 1-2 units and the regression is greatest, about 4 units, on the lowest level of ability, whereas those on the highest level maintain the status quo." (Husen, 1951 p. 88)

An early study of foster children concluded that the total contribution of heredity is about 75 or 80%. Environment normally brings about a variation in intelligence test score of only 6-9 points but exceptional circumstances may raise the score by as much as 20 points or depress it by as much as 40. What evidence there was on personality traits seemed to indicate a greater influence of environment than in mental traits (Burks, 1928). Another study concluded that only 4% of I.Q. variation can be accounted for by home environment. The hereditary component in intelligence causes greater variation than does environment and that "when nature and nurture are operative, shifts in I.Q. as great as 20 I.Q. points

are observed with shifts in the cultural level of the home and neighbourhood." (Leahy, 1935, p. 305). She also concludes that personality is more affected by environment than heredity. Hunt (1961) considers that improvements of 30 points may be made in I.Q. scores by the right kinds of experience.

A follow-up study of one hundred adopted children (Skodak and Skeels, 1949) reflected the modern view that the nature v. nurture issue is an unnecessary over-simplification. The authors showed that emotional and personal factors "probably located in the foster home", influenced the mental growth of the adopted children studied to a greater extent than hereditary factors. Allied to this were the investigations of Goldfarb (1943) and Bowlby (1951) on institutionalized children. They indicated that maternal deprivation hindered the total development of the child, physical, mental and emotional.

The interest engendered by the question of the relative importance of heredity and environment can be seen to be related to the growth in the use of group tests and many of the conclusions drawn from the wholesale application of these tests can be now seen to have shaky statistical foundations. In addition there has been an over-simplification of the idea of inheritance. Many observers appear to have considered traits as unitary and as controlled by single genes. A powerful counter-blast to such ideas may be found in Snyder and David,

"A gene always exerts its effects in the presence of other genes; hence has arisen the idea of genic balance by which is meant that any character is the result of the entire gene complex acting in a given environment. Variations in a character may be produced by variations in a single gene but always in the presence of the rest of the genes." (Snyder and David, 1951, p. 251)

Again environment has been widened to consider far more than the physical and social conditions of life. "Psychologically, environment consists of the sum total of the stimulation the individual receives from conception to death." (Anastasi, 1958, p. 64) This includes the pre-natal environment. The influence of temperature (Hoge, 1946) on the unborn child is just one aspect which has been investigated. Others are pressure, disease, radiation and emotional states of the mother. The recent use of the drug thalidomide during pregnancy and the resulting malformations in the infants illustrates the importance of the intra-uterine environment (Taussig, 1962). As the concept of environment has been extended into the pre-natal period; so it has been broadened to include internal influences. The terms "innate" and "inborn" are no more correct than the opposition of "internal" and "external". Environment is now taken to include both the intercellular environment and the establishment of gradients and, also, the intracellular environment. The genes are seen to exert their influence within the environment of the cytoplasm of the cell. The genes themselves act as enzymes or catalysts

within the cytoplasm, exerting influences without themselves being changed.

The end product of the genetic action depends not only on the nature of the gene concerned but also on the actual composition of the cytoplasm in which it is working. Genes themselves can be altered by certain environmental forces e.g. poisonous gas, X-rays, cosmic rays and certain chemicals. These influences do not produce specific changes, they only increase the likelihood of changes taking place and so the results are haphazard. Within this modern concept of environment the old dichotomy cannot be maintained. Heredity and environment can no longer be seen as opposing forces but as two aspects of the sum total of influences which shape the individual.

The Measurement of Individual Differences.

Although Kirkpatrick (1912) had made such a gloomy forecast on the future of mental tests, work on testing continued and the scene of this work shifted to America. Terman in 1916 published his revision of the Binet test under the title of the "Stanford Revision". He set out to remedy any imperfections in the original test, including its inadequacies at the upper-level, and to standardize it properly for American conditions. Each test was scored so that the median mental age of the children of one age group corresponds with the median chronological age of that group. Below 14 years the total number of subjects was 1,000, above 14 about 400 subjects

ranging from high school students to business men.

Terman demonstrated the distribution of intelligence on a histogram and obtained a "normal distribution". From the graph he showed the following facts:

1. there is no difference in kind between normality and feeble-mindedness since the frequency of the various grades of intelligence decreases gradually. "Psychologically the mentally defective child does not belong to a distinct type, nor does the genius" (Terman, 1916, p. 67).
2. deviations before the median are not more numerous than those above.
3. variability in intelligence does not become any more marked during adolescence than at any other time.

The Stanford-Binet was widely used and was not revised until 1937. Faults that had appeared over that time were (1) its inadequacy at the extreme ends of the distribution (2) its low ratings in the age groups over ten (3) the unsatisfactory nature of some tests (4) lack of precision in the instructions (5) lack of alternative form. The revision claimed to correct these weaknesses. It was issued, for example, in two forms L and M. It was standardised over a bigger population and unsatisfactory tests were eliminated. (Terman and Merrill 1937). In the field of individual testing the Binet test still reigns. The only serious rivals to

appear have been the tests of David Wechsler. The Wechsler-Bellevue scale of intelligence appeared in 1939 as a test of adult intelligence. Wechsler pointed out the inadequacy of existing adult tests from the viewpoint of standardisation, their over-reliance on speed and their evaluation in terms of Mental Age (Wechsler 1944 pp. 16, 17, 18). The success of this test led its author to construct a test for children on the same lines (1949) and the W.I.S.C. is now widely used. It has not yet been standardised on English or Australian children and a recent study emphasises the need for such standardisation before it can replace the Revised Stanford-Binet in Britain (Jones 1962, pp. 119-132).

Alongside this work on individual tests, other work was going on which was to lead to group testing and through that to investigations of the nature of intelligence. In 1904 Spearman suggested the two-factor theory of intelligence. After summarising psychophysical measurements of intelligence and describing Binet's work as of an "intermediate character between the elementariness of normal laboratory work and the complexity of practical activities," he goes on to list the faults in previous research. These are (1) the lack of precise quantitative expression (2) the failure to estimate the accidental coincidence (3) the failure to exclude irrelevant factors (4) the failure to consider errors in observation. He goes on to introduce methods of overcoming these faults: correlation coefficient, estimates of probable error, reliability measures and experimental rigour. When these methods

are applied it becomes clear

"that all branches of intellectual activity have in common one fundamental function (or group of functions), whereas the remaining or specific elements of the activity seem in every case to be wholly different from that in all the others" (Spearman, 1904, p. 284). In this article Spearman had made a beginning both to the method of factor analysis and to the controversy of general v specific mental factors. Among the many opponents of his 2-factor theory was Thorndike who in 1909 said

"In general there is evidence of a complex set of bonds between the psychological equivalents of both what we call the formal side of thought and what we call its content, so that one is almost tempted to replace Spearman's statement by the equally extravagant one that there is nothing whatever common to all mental functions, or to any half of them." (Thorndike, Lay and Dean, 1909, p. 369).

This was the beginning of a controversy which was to be waged from both sides of the Atlantic. British psychologists, following Spearman, have emphasised a hierarchy of mental abilities or factors. American psychologists have emphasised that all factors or groups of factors are equivalent in value. The parallel between aristocratic and democratic ways of life cannot be overlooked.

While attempts were being made to explain the nature of intelligence and the individual differences to be found in its functioning further developments were taking place in

the construction of intelligence tests. The stimulus of war caused the Army Alpha and the Army Beta tests to be constructed. In contrast to the Binet tests and others preceeding them or patterned on them, the Army tests were designed to be administered to a large number of subjects at the same time. Alpha was designed for general purposes. Beta was a non-verbal test designed for non-English speaking recruits (Yerkes, 1921). From these tests, were developed modern group tests, verbal and non-verbal, which aimed to measure general intelligence however defined. Other developments have been the construction of tests of special abilities and aptitudes such as the Seashore measures of Musical Talent and the McAdory Art Test, and tests which set out to measure certain aspects of intelligence, "non-intellectual intelligence" (Gough, 1953), "creative intelligence" (Torrance, 1960), "fluid" and crystallized intelligence" (Cattell, 1957).

The administration of group intelligence tests has been the basis for numerous studies. Differences in intelligence brought about by sex (Hobson 1947), culture (Witty and Jenkins, 1936, Woodworth 1910) and socio-economic factors (Wheeler 1942) have been measured. Studies of the influence of environment on test scores, (Goodenough and Maurer 1940., Skodak and Skeels, 1949) and differences between siblings, (Burks and Tolman 1932) are part of the bigger question of nature v nurture. New tests have proliferated - the Fifth Mental Measurements Year Book reviews 987 tests which have been published in the English-speaking world in the years 1952-57

(Buros, 1959 xxiii) while a bibliography of tests has reported 5,294 titles (Hildreth 1945).

Another approach to the measurement of individual differences which must be mentioned is Wechsler's work on the range of human capacities which appeared in 1935. Defining the range of human capacities as that difference in ability or magnitude of trait, which separates the highest from the lowest, the least from the most efficient individual in a normal population (Wechsler 1952, p. 37) and capacities as a measures of various traits and abilities (Wechsler, 1952, p. 10), he goes on to demonstrate that the range ratios of human traits and abilities vary from 1.02:1 to 3.87:1 with the vast majority falling between 1.2 and 2.5:1. Here are some of the average ratios quoted for some classes of capacities:

linear traits 1.30 : 1

metabolic constants 1.41 : 1

motor capacities 2.23 : 1

perceptual and intellectual abilities 2.58 : 1

The greatest range of difference reported is in "hard learning (substitution test)" which is 3.87: 1 (Wechsler, 1952 pp. 160-172). These figures which exclude the extremes of the population - that is the highest and lowest one-tenth of 1 per cent - , illustrate the comparatively small range in which human differences operate and gives some justification to the early neglect of individuality.

The applications of intelligence tests in educational practice is extensive. It includes selection for special

education extending from the mass testing of the 11+ type to determine eligibility for Grammar school education to the individual testing of retarded children to determine their special needs. More generally intelligence tests are used to evaluate pupil progress and to indicate discrepancies between promise and performance. Individual intelligence tests are useful tools in guidance and counselling work and are extensively used in child guidance clinics. Intelligence tests prove useful too in the evaluation of educational techniques as they are a sensitive measure of successful education.

C. Educational Dimension

The methods evolved by Maria Montessori were far ahead of her time. There was insufficient psychological knowledge to provide either the theoretical framework for such an approach or the practical mechanics. Too much depended on the personal skill and training of the teacher who was compelled, because of the inadequate psychology, to operate by intuition. This limited the general application of the methods.

The twentieth century saw the adoption of compulsory education. Immediately the problems arising from the sheer numbers involved became apparent. Shortage of teachers, shortage of buildings, shortage of money became the determining factors. Educators became concerned about the fate of the individual, in the large group education which had become necessary.

"Almost all the writers urge the recognition of individual differences in ability, interests and needs. The performance of this function becomes an obligation as soon as we make progress towards popularization since wider diversity among the student body will accompany any significant increase in the proportion of young people of given ages who enroll in the schools". (Koos, 1927, p. 157). As a result of this concern the first quarter century saw the publication of a flood of articles on teaching methods and classroom organization designed to alleviate the problem. Summarizing the results of all this effort from the perspective of 1932 after a large-scale survey of teaching practices Billett says,

"In other words, the facts and theories concerning individual difference which have filled library shelves to overflowing during the past quarter of century are still reposing on library shelves, or echoing through the lecture halls of schools of education, much more generally than they are incorporated in the practice of secondary schools. No fact has been established more firmly by this study than the fact that comparatively few schools are making thorough provision for individual differences." (Billett, 1932, p. 9).

Let us consider some of the 'facts and theories' developed during this period and estimate their efficacy.

It has already been suggested in the introduction that there are two aspects from which the concept of individuality may be viewed. The first is from the aspect of

individual differences, that is, the starting point of education. The second is from the aspect of the individual personality or the goal of education. There are also two essential approaches made by those who are involved in education. The first is to limit individuality, the second is to encourage it. Whichever approach is adopted depends on the theoretical orientation of the educator. Those who view education as a levelling device or as the accumulation of knowledge or those who consider human nature as essentially evil will all tend towards favoring the reduction of the range of differences, "Some educators see their task as standardization, as the development by the school of a uniform product. To them, human variability represents a problem, something schools must struggle with and eliminate as far as possible in order that all of the students can be fitted into a neat manageable framework for learning that corresponds with the existing organization and structure of society" (Waetjen, 1961, p. 4). On the other hand, those who see education as a process of growth, those who view the child as essentially good, or at least, as potentially good, and those who consider society to be only as strong as its individual members, will all try, in some measure, to enhance individuality, to increase the range of human potentiality.

"Other educators ... perceive variability as a tremendous resource ... this human potential is not without problems, but the problems are those of utilizing variability most effectively and of extending variation within and among

individuals rather than trying to eliminate it." (Waetjen, 1961, p. 5). The tragedy of modern education has been the gap between theory and practice, the gap between training establishments and schools and the gap between schools and the public.

The question is then, how can mass education safeguard individuality? Or, put another way, how can the teacher cater for the wide range of difference to be found in a typical class? The answers to this question are varied and may be considered in turn.

1. Ignoring the differences

This attitude is common wherever there are schools. It is the most convenient attitude when one person has to teach a large group. Gardner Murphy describes how he once asked a group of young adults from all over the world where there was a classroom in which individuality was not encouraged. He described the classroom in some detail and the answer he was given was, "Everywhere" (Murphy, 1960, pp. 101, 102).

In a school made up of such classes the children are sorted into groups of 20 - 60 or more on a basis of age or attainment or some combination of these. Once in these groups or classes they stay in them usually for a year. At the end of this period, if they have achieved the required standard they move up to another level. Sometimes this standard is attainment in the year's work; sometimes it is age. This method has been called the 'lock-step' of modern education. Within this class group each child is taken through the same set of work and is measured against the same standards. Sometimes

schools have been flexible in their application of this and differential work has been provided for the very slow or the very fast. More often it has been applied rigidly. Each child has been exposed to the same subject fare, tested on the same weekly test, examined on the same examinations. An occasional cry of protest has been made about the number of "slow learners", "remedial work" has been demanded but, in general, the system has ignored individual differences.

2. Reducing the differences

Another answer is to attempt to reduce the range of differences within a typical class group. There are several ways in which this may be attempted. These may be summarized as:

- a) grouping procedures,
- b) promotion procedures,
- c) coaching procedures.

a) Grouping

This term covers all those techniques of sorting and selection which are based on the assumption that a reduction of the range of differences within a class or within a school, provides a more efficient learning situation. The practice can be further broken down into:

- grouping within the class,
- streaming within the school,
- selection within the school system.

Class groups can be of many kinds from the fixed sets which are an extension of the school streaming to the

flexible groups used in "activity", "project" or "group" methods. The more flexible of these class groups seem to be attempts to widen the range of individuality rather than to limit it and these will be re-considered under a more appropriate heading. The other kind of groups seem to be an attempt to organize away the facts of variability in the classroom.

The most usual criteria of selection are marks on particular school subjects, marks in all school subjects, position in class or I.Q. Sometimes the child remains in the same set or section for all subjects. Sometimes he moves from one to the other with changes in subject. A survey in U.S. reported that while many schools used extra class grouping into sections or sets they were used in conjunction with other provision for individual differences. (Billet, 1932). In Australia it was reported (Wyndham 1932, pp. 132-133) that 87% of groups were organized on the principle of homogeneity on the criterion of scholastic attainment. No measurable difference between schools basing their grouping on age and those that used attainment was reported "true effectiveness seems to depend rather upon the degree to which the organization of a school is suited to the varying attainments, capacities and needs of individual children and the degree of flexibility by which it is characterized." (Wyndham, 1932, p. 133).

Streaming is a widely used practice, particularly in British schools. "A large majority of English primary school teachers believe that streaming is educationally sound" (Daniels 1961, pp. 69-77). "Recent research seems to indicate that the

practice may have adverse effects upon the pupil, fewer social contributions ---- more aggressive behaviour and less attention to work" (Rudd, 1958, p. 47), may preserve differences between pupils' rates of progress and levels of attainment (Blandford 1957) and may actually decrease intelligence scores (Daniels 1961, p. 127). In fact the latter study reports an increase in I.Q. of about 3 points in unstreamed schools as compared with streamed schools. Other British studies show conflicting or less conclusive evidence (Yates and Pidgeon 1959), (Start 1961).

Streaming practices have been used in the U.S. too and in 1932 a survey showed that 32% of secondary schools were using "homogeneous or ability grouping", (Billett 1932). A recent American survey of homogeneous grouping could not reach any conclusions. Thirteen studies favoured homogeneous grouping, fifteen studies found either no difference between heterogeneous and homogeneous groups or found homogeneous groups detrimental and five studies gave mixed results (Ekstrom 1959).

The most usual conclusion has been that, in forming homogeneous groups, changes are introduced between the groups which produce group differences and make comparison difficult (Wyndham 1934, Daniels 1961).

Rudd (1960) estimating current research in the "Effects of Streaming", suggests four lines of enquiry on which future investigations could proceed. Most research seems to indicate negative effects from streaming practices and further

research along the lines suggested seems necessary. The basis of grouping in British primary schools is usually, either ability, or scholastic attainment, or a combination of these two but in secondary schools various criteria may be used. Billett, reporting on the bases of grouping in U.S., lists 16 different criteria and reports that I.Q. from a group test is the most widely used method (46.5% with examination marks second and "effort" third. On the other hand small schools generally used teachers' marks (Billett 1932). In Australia primary schools have not favoured streaming, considering it to be "undemocratic", but secondary schools, where selective, have made great use of streaming practices. There has been a lack of published material on this aspect since before the war, (Wyndham, 1932 and 1934), but recent changes in educational practices have produced some interesting developments. Comprehensive high schools have adopted varied grouping practices. The most popular in Tasmania seems to be either streaming by subject on a multi-lateral approach or streaming by ability. Contemporary practices as found in Tasmania will be reported in the analysis of the questionnaire. However, a recent review of research on grouping carried out locally concluded that all research favourable and unfavourable, on this subject has been unsatisfactory. "Ability grouping as an aid to individualized learning may not yet be established, but the way is certainly clearer now than it was 30 years ago and the challenge to devise satisfactory methods to achieve it is now, if anything,

stronger than ever" (McCulloch, 1963).

Practices of selection are designed to stream children of like ability into the same kind of schools. The underlying assumption is that children who are alike according to some testable criteria, e.g. I.Q. or results on attainment test, are alike in the kind of education they need. The result is selection at 11-plus or thereabouts, for different kinds of secondary schools and the institution of special schools.

British education, politically, socially and economically appears to be committed to a selective system of secondary education. Recent developments in comprehensive high schools (Pedley 1956, Simon 1958) are comparatively limited although increasing steadily (e.g. Liverpool, Bristol). There is wide-spread opposition to any whole-sale change lest in freeing education from one fault, (selection at 11-plus) much might be thrown away that was of real value. Recent publications would seem to indicate that British attitude towards selection is hardening rather than otherwise (Young, 1958) and most research appears to be directed towards refining the techniques of selection rather than comparing children in selective and non-selective settings. Thus recent papers have re-considered the evidence on Intelligence and Attainment tests as predictors of success in Grammar schools (Hobby 1953, Schonell 1949, Wrigley 1955). The latter concludes "A survey of published research showed that the relative order of merit for the prediction of success in Grammar schools by the component parts of the 11-plus selection examinations,

was (1) Intelligence test, (2) English, (3) Arithmetic. Thus the generally accepted view of educational psychologists, which has been recently questioned has been upheld." (Wrigley 1955, p. 115, 116). Other papers have been concerned with developing other selection devices, interest tests (Wiseman 1955, p. 92), essays (Nisbet 1955, Edwards Penfold 1956, Pidgeon and Yates 1957), teachers assessments (Sutcliffe and Canham 1945) and in estimating the effect of anxiety in the 11-plus test situation (Bowyer 1961). Yates and Pidgeon (1958) have summarized the current research on the actual methods of transfer.

Billett lists eight kinds of special class which he discriminated in the U.S. These are: 1) for slow pupils, 2) for failures, 3) opportunity classes for slow pupils, 4) adjustment classes, 5) remedial classes, 6) restoration classes, 7) special classes to accelerate capable pupils, 8) opportunity classes for gifted pupils. To these should be added schools and classes for children with special disabilities, blind, partially seeing, deaf, hard of hearing, hospital children, crippled children. As Billett concludes "even when all other provisions for individual differences are functioning efficiently a certain small percentage of the pupils are unable to succeed with regular school work without additional help." (Billett 1932, p. 195).

In general the problem involved here may be summarized as "segregation or integration" (McLeod 1960, p. 170). Should children with special difficulties be segregated with those with similar handicaps or should they remain part of the

general school system. In general arguments for integration are based upon the effect on the child of being withdrawn and of only mixing with others who are abnormal. Arguments for segregation stress the difficulty of giving such children special help in a normal school (McLeod, 1961, p. 163), the efficacy of specialist attention in improving the condition of such children (Segal 1961, p. 177), and even the hardships imposed on the classroom teacher by the presence of severely a-typical children (McLeod 1960).

Most studies stress the need for specialist teaching for the severely handicapped. The problem of coping with the wide range of children between these two categories has been described in reference to cerebral palsy (Dunsdon 1960, p. 37), deafness (Ewing 1960, p. 163), dullness (Segal 1961, p. 177). A compromise method of combining special and normal classes in a small school has been suggested (Wiesendanger 1962, p. 157) and this parallels some recent developments in Tasmania. American figures suggest that about one child in ten needs special treatment in school because of some gross disability.

In Tasmania, facilities exist for mentally sub-normal children, (Talire, Lachlan Park, St. George's, Devonfield), for educationally sub-normal, (Treherne, Moonah, Dora Turner), for crippled children, (St. Giles, D'Alton School), for partially sighted (Sight-Saving School), for blind, (School for the Blind), for deaf (Lady Rowallan House).

The total number of teachers employed in these schools is 47, with 5 Junior Teaching Assistants or Monitors.

Of these 47 teachers, only 13 have Tasmanian Teacher's Certificates and only 27 are classified as Assistant or Temporary Assistant. Even fewer appear to have qualifications in special education.

Interest in children of high ability date back to Terman and Hollingworth with their "follow-up" studies. Recently a Scottish study of this kind confirmed that children of I.Q. 135 plus were following the kind of careers which their intelligence had forecast. (Nisbet & Gammie, 1961, p. 53). Children of high intelligence have recently become the subject of special interest in education as the need for more highly skilled specialists increases. There has been more emphasis on giftedness in U.S. than in either Britain or Australia because of the lack of selection in secondary education in the U.S. and more recently because of the fear that Russia was exceeding America in the number of technicians and scientists being educated. The British system tends to produce special classes and schools for gifted children while in U.S. special efforts must be made before such classes or schools may be set up.

As long ago as 1932 Billett reported 6% of secondary schools as providing opportunity classes for gifted children, (Billett 1932) while in 1958 special high schools catering for the very bright pupil are reported (Meister 1958, p. 268). Some of these high schools screen their pupils at entry by tests setting, for example, an I.Q. floor of 125. Others select on the basis of purpose - science high schools, music

and art high schools. Both methods are also used within comprehensive high schools (Michael 1958, p. 264) and primary schools (Norris 1958, p. 222).

Although the need for special consideration for the gifted seems less urgent in Britain there is a growing awareness of the necessity for a constructive approach if much wastage and frustration is not to occur. A comprehensive summary of this position was given recently by Wall (1960).

b) Promotion procedures:

This term covers the practices of acceleration and retardation by which children are moved upward to a higher grade or held back in their present grade within the general age promotion scheme. Such practices are uncommon where streaming has been adopted, e.g. in Britain, since movement from one stream to another has much the same effect as promotion. Where a grade promotion system is maintained some provision must be made for those who fail to 'make the grade', that is achieve a certain minimum standard. This is usually done by requiring the pupil to repeat the grade. Less frequently pupils who complete the grade work quickly or with good results are allowed to "skip" grades. Another method that has been used is that of frequent promotions. This method was tried, about 1890, in Quincy, Massachusetts. The "Batavia Plan" kept uniform promotion by creating two streams and giving special coaching to the slower stream. In Cambridge, Massachusetts, two parallel courses were established, one of six years duration and the other of eight (Brubacher 1947, p.399).

In general, however, the most frequently used method has been to accelerate and retard on an ad hoc basis, setting up "opportunity classes" wherever the number of retarded children has become too great.

That such methods fail in their aim to reduce the range of differences in any one grade has been convincingly demonstrated (Cook and Clymer 1962) and alternative procedures have been suggested (Goodlad 1962, Goodlad and Anderson 1959). In Australia, age promotion has usually been favoured for social reasons, although retardation of slow pupils sometimes takes place, at Grade I or Grade VI.

c) Coaching Procedures:

This term covers the practice of providing extra tuition for pupils who are failing in their work and, less frequently, the provision of extra tuition for children who make extra fast progress. The first practice, usually called "remedial work" is widespread. Billett reports 59% of schools in the U.S.A. as giving "special coaching for slow pupils" (Billett, 1932, p. 196) and the practice is common in Britain and Australia. There are a number of ways in which such remedial work is presented:

1. The teacher coaches pupils during school hours on work on which he has failed.
2. The child works privately on work failed during Art, Music P.E. or at lunchtime.
3. The teacher coaches pupil after school on work on which he has failed.

4. The child stays behind after school to finish uncompleted work or to study privately.

5. The teacher provides alternative work of an easier kind to be done during school hours while the other pupils do class work.

6. The teacher provides extra work to be done after school hours.

7. Visiting specialists give extra tuition of a special kind and leave work to be done during normal class periods.

8. Child visits "remedial centre" regularly for extra tuition c.f. suggestion in the Symposium on "Integration or Segregation of Slow Learners". (McLeod 1961, p. 163).

9. Child receives extra tuition at Saturday morning classes or vacation classes.

10. Parents arrange private coaching by individual tutor or coaching college.

Provisions for quick learners, or 'enrichment work' is less common. Billett reports 8% of schools giving 'special coaching to enable capable pupils to skip grades or part of grades' and 4% with "opportunity rooms for gifted pupils" (Billett 1932, p. 199). Since the "Sputnik" alarm in the U.S.A. there has been an increased interest in the gifted child and this is reflected in the number of publications e.g. (Rockefeller, 1960, Henry 1957) and the number and kind of provision for brighter pupils. These have included enrichment procedures. In Britain there has been little concern with

this aspect of education since it is felt that the highly selective system adequately caters for the brighter pupil. In Australia the problem exists more obviously with un-streamed primary schools and an increasingly large number of unselective high schools. The change-over to comprehensive schools in Tasmania has caused an interest in ways and means of extending scholastically the top 10%. Enrichment procedures have been tried (e.g. Tarooma High School in 1959) but, in general, methods which fit more easily into the rigid examination structure have been favoured. Both remedial and enrichment procedures are short term policies designed to patch up faulty educational practices. While they are necessary in the existing situation they tend to obscure the real need for an education designed to fit all levels of intelligence and all pupil needs.

3. Varying the Subject Matter.

A third answer to the question has been "vary the subject matter to be learned or vary the rate at which the subject matter is presented to the pupil." Although this answer is more constructive than the others previously mentioned the practical effects are often similar since the simplest method of varying the subject matter is to form homogeneous groups. This may be done by streaming as in English primary schools or it may be done by allowing the pupil to choose from a wide range of subjects as for example the new Tasmanian comprehensive high schools. In such schools

a variety of subjects and subject levels are offered and the pupil might have a choice from among thirty subjects. The actual choice is not as wide as it appears since limitations of certificate requirements, pre-requisites, sex and ability all limit free choice. Techniques appearing under this heading vary, from homogeneous groupings on two levels to multi-level groupings allowing individual treatment, e.g. Reading Laboratories. As such the methods form a bridge between methods designed to limit individuality and methods designed to extend it. The more truly individual work will be described later.

4. Using Guidance Techniques.

Another procedure which provides an answer to both questions is that of guidance. This term covers direct work by psychologists and allied staff, social workers, therapists, remedial teachers, with individual pupils. Verco mentions four main functions of psychologists in education departments, vocational guidance, treatment of problem children, treatment of atypical children and educational guidance (Verco 1958, p. 19-30). All of these services are equally necessary both in systems which aim to limit the range of differences and in those which aim to increase it. Such procedures have been extended into tertiary education and Student Counsellors have been appointed in many Australian Universities. Some of these positions have been held by trained psychologists and the aim has been to help students with personal problems of the social-

emotional kind as well as the academic and practical kind.

Most educational systems maintain psychological services. In Britain two organizations exist side by side, the educational psychology service controlled by the L.E.A. and the child guidance service run by the children's health service. In most states in Australia an educational guidance service is provided which acts from a central office with officers of the service visiting schools or interviewing children on request. In N.S.W. about sixty school counsellors are appointed as members of school staffs. An attempt in Tasmania to appoint resident guidance officers to the new comprehensive high schools broke down on the difficulty of obtaining and keeping trained personnel. The duties of such a guidance officer may include many of those more usually done by headmaster and deputy headmaster such as: interviewing behaviour problems, interviewing those who are failing, interviewing parents of such children, acting as liaison between school and welfare officers and police. In addition he may be responsible for maintaining the school testing and record service, giving careers information, vocational guidance and controlling and, in many cases, giving remedial education. Since the breakdown of the scheme for resident guidance officers a return has had to be made to providing a service from two central offices. In 1963 the following staff were employed on full time guidance (Hobart 16, Launceston 4. Of these 13 hold degrees).

In the U.S., school counselling is an accepted

educational service and many publications on the subject have appeared. While counselling procedures can be used as a further means of fitting the pupil to the Procrustean bed of a uniform curriculum they can also be a genuine effort to provide an education to fit the individual child. In effect the school counsellor attempts to provide the teacher with the means of applying tutorial techniques to a large group of children.

5. Increasing the range of differences

Some methods are aimed specifically at increasing the range of individual differences. Methods which aim to develop the individuality of the child are basically concerned with understanding the nature of the child. Most of the techniques and plans described in this section represent an attitude to education which has been inherited directly or indirectly from Rousseau. Most of them would fall into the classification of "child-centred approaches". This is not to suggest that all child-centred approaches emphasize the individuality of the child. Much current criticism of child-centred education stems, in fact, from its preoccupation with "adjustment". With its origin in the social needs of the U.S.A. and its impetus both from the mental health movement and the child development movement the aim of child-centred education can be conformity rather than individuality. Child-centred approaches at their best,

however, have not lost sight of the child as an individual. This may be illustrated by two quotations, the first from the inaugural meeting of the New Education Fellowship in Calais 1921, the second from the Statement of Principles at the Nice Conference of the N.E.F. in 1932.

"Education should respect the child's individuality. This individuality can be developed only by means of a discipline that sets free the spiritual powers within him."

"Education should be planned so as to meet the diverse intellectual and emotional needs of children of different temperaments and should provide them at all times with opportunities for self-expression according to their own distinctive needs." (Boyd 1957, p. 6).

Herbart, Froebel and Montessori have all contributed to this aspect of education and their ideas reappear over again in different guises. The earliest recorded method of individual instruction with large groups was in 1888 when Preston W. Search developed a systematic plan for secondary pupils. Then during the second decade of the Twentieth Century F.L. Burke pioneered in breaking the 'lock-step' by developing individual materials. The term 'lock-step' has been used since Burke to describe the class-grade system of school organization. Billett includes eleven methods in use in schools in this classification:-

Problem method, differentiated assignments
laboratory plan of instruction, long-unit
assignments, project curriculum, contract
plan, individualized instruction, Morrison
plan, modified Dalton plan and Winnetka plan.

(Billett, 1932, p. 9).

There is considerable overlap in the use to which each of these terms has been put. A useful classification of techniques aimed at fostering individuality arranges them into a hierarchy according to the extent to which they satisfy this aim. This hierarchy includes methods previously mentioned as limiting the range of differences and it is in order from low to high.

- I. Uniform tasks on uniform schedule with individualization showing in differential performance.
- II. Homogeneous grouping on two or more levels on I.Q., M.A., E.A. combined in some formula: differences in level between groups, differential performance within them.
- III. Contract plan on two or more levels: allows some choice and so more flexible than the above.
- IV. Individual instruction: Dalton and Winnetka plans as typical.
- V. Large units with optional related activities and experiences.
- VI. Individual undertakings, stemming from and contributing to the joint undertaking of a group of learners.

(Mursell 1946, p. 204).

Levels I and II above have been described previously. Level III describes a modified form of IV and it is best to begin with a description of systems at this level.

a) Individual Instruction

The Dalton plan is an extension into the primary and secondary schools of the didactic individual work of Montessori. Helen Parkhurst, who had done much to extend the Montessori Method in U.S.A. established a system of individual instruction in the Dalton High School, Massachusetts in 1923. The scheme is essentially an organizational one. Normal division of pupils into grades is abandoned. Pupils are allocated to a "home room" on a house basis. Classrooms became laboratories and the conventional time-table is discarded. The curriculum and the jobs re-divided into units of one day's work in each subject. The pupil signs a contract to complete a certain number of assignments or days work. The number of these are based on the child's ability. Under the plan the morning session is kept for laboratory work and the afternoon for such group activities as music, art and physical education. During the morning session the child works as an individual on his own assignment in the particular laboratories to which his jobs take him. The teacher in these laboratories acts in the same capacity as the Montessori "directress" and guides and helps rather than teaches. Complete records are kept of pupil progress and graphs are kept by the pupil, the instructor and the house.

In 1932, when Billett investigated, 162 schools or

2% claimed to follow the Dalton Plan, while 6% reckoned to follow a modified system. When these were further investigated, however, the numbers were reduced to 32 and only in one school was it being used with unusual success (Billett 1932 p. 287). Rennie having worked at Dalton, wrote of the Plan in the Times Educational Supplement (May 1920) and several schools experimented with it. Bassett and Eades evaluated their interpretation of the Dalton Plan after one year's operation (Parkhurst 1923 p. 123). Later evaluations were made by Thompson (1933), Mayer-Oakes (1936), and Beard (1949) among others. Most of these reports were favourable.

In Australia experiments with the Dalton Plan were made in the late 1920's. In Victoria, 100 schools are reported to have tried some variation of the Plan and one school, Trinity Grammar School, had used it for three years with distinct success (Browne, 1927). Another experiment was reported at the Australasian Association for the Advancement of Science in Brisbane in 1930. Preliminary reports from the school (Thebarton Technical High School, Adelaide S.A.) were favourable. The method seemed to work very well for all but the weaker pupils and for these a class system was established (Fenner and Paull, 1930).

In the World Survey of Education (UNESCO 1958) the Dalton Plan is indexed only in reference to the Netherlands. There 249 primary and 3 advanced primary schools applied the Dalton system "either, for all classes or for part of the classes".

The Winnetka Plan was developed by Washburne from Burke's ideas. The curriculum was divided into two parts - "common essentials" the three R's and similar subject matter and "group and creative activities". Half of the morning and half of the afternoon are devoted to each kind of activity (Washburne 1925 p. 78).

The first part is completely individualized "lectures and recitations have been abandoned entirely in favour of self-instructive practice exercises" (Billett 1932, p. 289).

If the pupil passes the first of the practice tests he proceeds to the next unit. If he fails then the scoring of the test will automatically indicate to him that further practice is needed. The similarity between this and modern programmed learning should be noted. When he needs help the teacher who moves about the room working with individuals can give it to him. This scheme also had a limited success. Certain elements of the Plan were adopted by other schools and in 1932, 1% of schools responded to Billett's survey as following the Winnetka Plan. The name 'Winnetka' and many of the ideas associated with it have continued to exert some influence. In Australia the Plan was being advocated as late as 1945 (McLean 1945).

The Morrison Plan also contained some elements common to the Dalton and Winnetka Plans. Like them it marked the high point of attempts to meet the challenge of variability with organization. Like them it is almost forgotten

now. There are a number of reasons for this failure. The first is the economic depression, followed by the war, followed in turn by the population increase. Even in 1932 some signs of this were evident.

"In some schools, where most advance had been made, much ground has been lost recently as a result of the economic depression, the first efforts at so called retrenchment often being aimed ignorantly and callously at the destruction of those agencies of the school by means of which the pupil may be recognized and taught as an individual". (Billett, 1932, p. 415).

Another reason is the dependence of these methods on adequate text-books and similar material. Such text-books have not been available and the organizers have been dependent on duplicated note and work-sheets. These are not really a satisfactory substitute. This again was recognized early;

"There are those, however, who feel that it is putting new wine in old bottles to adopt the very progressive Dalton Plan while continuing to use traditional curriculum and text'. (Washburne 1925, p. 83). The originators in their optimism felt that text-books would be designed to supply the need in the newly organized schools. That this did not happen was probably again due to the depression. It is with modern advances in programmed learning that schools are at last in the position to offer pupils the kind of books they need for individual study.

Another reason for the failure of these techniques and one which is more serious since it applies also to programmed learning, is the criticism that they lay undue stress on factual material, on mechanical assimilation rather than "dynamic learning". In fact there has been a rather naive assumption that organization could explain away all the problem of individual differences, one recent writer points out "no scheme of school organization, however, elaborately worked out provides for the types and ranges of learner variability encompassed by the school" (Goodlad 1962).

On the other hand he does not agree with the opposing view that "the good teacher" will cater adequately for individual differences. Somewhere in between lies a combination of good organization and good teaching practice. The Dalton and Winnetka Plans tried to arrive at this by spending half of the day at creative activities. Somewhere along these lines the right balance can be struck.

b) Education by the Project Method.

Mursell's final levels of individuality are concerned with what are loosely called "projects". These originate from Dewey's "problems" and from projects used in agricultural education. The characteristics of a project were early defined as

1. it should possess unity
2. the learner should clearly conceive the practical end
3. the standards of achievement are clearly objective

4. the learner should have to apply much of previous knowledge and experience and should acquire new skills.

(Sneddon, 1916, pp. 419-423).

The project is the direct outcome of Rousseau's natural education and Pestalozzi's object teaching. The child should learn by doing and by doing what is natural, what is part of the world around him both his natural environment and his social. The idea is linked closely with Herbart's concept of the apperceptive mass (Branom 1919, p. 22) and, in the characteristics of the project mentioned above, Herbart's "Formal Steps" may be distinguished. In fact a project, properly designed and carried out, satisfies all the principles of education.

Projects can be individual or they can be group activities - that is levels V and VI in Mursell's hierarchy. Projects differ from assignments in that they are organized around some "Centre of interest". This may consist of the study of a particular object, character, institution or place, the making of a particular object, display or feature. Projects may arise naturally from the interests of the children or they may be planned beforehand by the teacher but, whether spontaneous or deliberate, they need careful organization. Typical projects allow for integration of many of the subjects in the curriculum and a feature of projects, at least those on a larger scale, is the manner in which all aspects of the syllabus are taught through the one activity. Projects were reported in Victorian schools as early as 1915 and in 1927

it was said, "The advocates of the project method feel that there is big future for it with Australian children since it negatives the possibility of formalism and mechanical teaching and at the same time provides a very sound training in initiative and resourcefulness." (Browne 1927, p. 131). An interesting example of this is given by Blakemore of Wagga Wagga who demonstrated in a series of experiments in New South Wales Schools how the primary school curriculum could be integrated.

He reports that in three areas:

- (a) acquisition of factual knowledge
 - (b) acquisition of fundamental skill
 - (c) development of personality and social attitudes
- results were sufficiently good to justify further experimentation along these lines. (Blakemore 1953, pp. 76-77).

A typical example of the group project (level VI in the hierarchy) is a local survey in which the class as a group study the local district. Properly organized the local survey can provide individual work which is purposeful and at the same time allows the pupil to operate as a member of a group. "The local survey can help to bring the individual into sympathy with his surroundings, not passively, but as an active unit." (Layton and White 1948, p. 1).

The use of projects and surveys has continued in schools since their beginning in the early part of the century. Perhaps the highest point of their use was in the early years

of the secondary modern school in Britain before such schools became examination conscious. Certain of these schools became organized around centres of interest, art, drama or local industries. Others used projects extensively but within the normal division into subjects. A modern extension of this practice is the setting up of field centres. In Britain local authorities have set up centres of country pursuits to which schools go in turn. In Tasmania Launceston Church Grammar School has a mountain centre to which groups of boys go for an outdoor extension of school work. Many primary schools have been organized on "activity" lines. This means, in effect, that individual and group work of a pupil participation kind have replaced formal class-work or individual assignment work. Properly organized "activity" schools can have truly individual work in a setting of co-operation and pupil effort. An example of a modern approach to the teaching of Mathematics which takes into account the necessity for individual progression is the Cuisenaire system (Gattegno and Cuisenaire, 1954) which allows the child to understand the concepts of number before he needs to apply them. This is done by individual and group activity with coloured rods which are reminiscent of Montessori's sensory apparatus.

Another modern approach, still in the experimental stage, is programmed-learning. This developed from the early investigation of teaching machines (Skinner, 1961). It was relatively simple to make a device for controlling the

presentation of material. More difficult was the arrangement of the material into meaningful units. A breaking-down of the learning task into basic steps, the organization of self-testing and correction devices, the arrangement of parallel paths for slower learners, all this taught the "programmer" a great deal about the learning process and the best way of presenting the material. Now it has been found quite possible to dispense with the "hardware", as the machine has been dubbed, and to present the material in text-book or card form. The difficulty experienced in the early days of the Dalton Plan in finding suitable text-books has been mentioned as one of the reasons for the lack of success of this method of organization. Programmed Learning offers a solution to this difficulty. In fact there is no reason why, with modern advances in techniques and materials, a modification of the Dalton Plan should not provide at least an organizational answer to the problem of teaching the individual in a system of mass education.

To conclude this survey of how schools have tried to deal with individuality, let us consider a recent article on "Individuality in the Learning Process" (Eckstrand, 1962). The author considers that both educators and learning theorists have neglected the study of individual differences in ways of learning and that the blame for this lies with the psychologists. In considering some attempts to cater for individuality he mentions the Dalton and Winnetka Plans as having been 'proved cumbersome'. Ability grouping he considers to be based upon

one difference, that of 'rate' and is therefore ineffective. He suggests that recent developments in teaching machines provide both an answer (if only partial) to the problem of catering for individual differences and a method of investigating individuality in learning.

At the present time it would seem that both education and psychology are ready for a leap forward in their understanding of individuality. Through this new understanding there should emerge a real science of individual differences and a method of education which is concerned with the optimum development of human potentiality.

CHAPTER IX

CURRENT CONCERN FOR INDIVIDUALITY

IN EDUCATION AND PSYCHOLOGY

An attempt was made to assess the extent of current concern for individuality by surveying a) local (Tasmanian) schools and b) current publications.

a) Survey of Tasmanian Schools.

In order to assess the extent to which the methods described in the section "Individual Instruction" are actually in operation in schools today, a survey was made of teaching methods in Tasmania.

The State of Tasmania offers a useful field for such a survey for the following reasons:

1. It is small enough (area: 26,000 square miles, population 350,000) for information received from a questionnaire to be supplemented by personal inquiry.

2. It is relatively homogeneous in its educational system since 75% of its schools belong to the centralized State system and the remaining 25% of non-State schools follow similar courses, recruit teachers from similar sources and take the same external examinations.

3. It is an educational system in the English tradition so that any results obtained from its study may have some relevance to other systems based on the same tradition.

A questionnaire was used of a similar type to that used by Billett in U.S.A. in 1932, since the same kind of

information was being sought. The limitations of the questionnaire as a source of reliable data were fully realized, particularly after Billett's experiences (Billett, 1933). It was felt, however, that since the data could be checked by personal visits to the schools, it was possible to compensate for some of the deficiencies of the technique. It was felt, moreover, that the schools which returned the questionnaires were likely to be those most interested in the subject of the questions. Their answers would tend to give a more favourable impression than those not returning. This would mean that the picture of individual techniques being used by schools, that would emerge as a result of the survey, was likely to be an optimum one. Any deficiencies in practices or attitudes revealed by the survey would, therefore, be real.

Description of Sample

All schools in the State were sent a questionnaire during 1962 and one hundred and fifty-nine schools, both State and Private, responded. This represented a return of 53% of Tasmanian schools. The percentage of State schools responding was 65%. These returns represented different kinds of schools ranging from a high 72% from high schools, to a low 40% from district schools. This difference in percentage is not significant because of the small number of schools involved in the district school group. The poorest response was from schools outside the State system. Only 15 of these (approximately 19%) returned completed forms;

TYPE OF SCHOOL	NO. OF SCHOOLS	NO. OF RETURNS	PERCENTAGE OF RETURNS
State High Schools	25	18	72.0
State District Schools	5	2	40.0
Private High Schools	14	3	21.0
Total High Schools	44	23	52.7
State Area Schools	36	26	72.2
State Primary Schools:			
Large (Classes IA-III)	72	44	61.1
Small (Classes IV-VI)	83	54	65.0
Non-State Primary Schools	66	12	18.2
Total Primary Schools	221	110	49.8
Total Schools	301	157	52.8
Total State Schools	221	144	65.2
Total Non-State Schools (inc. Secondary Depts)	80	15	18.8
Total Schools	301	157	52.8

Figure No. 7. Analysis of Schools Responding to Questionnaire by Size and Type of School.

this percentage is too small to allow any comparisons to be made between State and non-State schools. In general, the sample was considered to be adequate for State schools but inadequate for non-State schools. A detailed break-down into classes of schools is attached.

Description of Questionnaire:

The questionnaire sought information on the following topics:

Slow learners in the normal school	Q 1, 2 & 3
Class organization (grouping and streaming)	Q 4, 5 & 7
Gifted children	Q 6
Individual teaching	Q 8, 9 & 10

Multiple choice questions were asked. Responses were indicated by ringing the question or questions which 'most apply to the procedure adopted in your school.' The covering letter was addressed to the Head teacher and it was intended that the Head or his deputy would complete the form. The general scope of the questions followed those of Billett but the hierarchy of assignment and project practices was adapted from Marsell (1940).

Since few of the answers were exclusive, combinations of answers were frequent, e.g. a school might give slow learners extra tuition during sport, during music and after school which would result in a response to Q 3 of a, b & c.

Analysis of schools responding to Question 2(c) According to Size and Type		
Category	Number	Total
No. of primary schools responding to Q 2C	-	39
No. of larger primary schools	13	-
No. of smaller primary schools	21	-
No. of private primary schools	5	-
No. of area schools (primary & secondary)	-	3
No. of schools responding to Q 2C	-	42

Figure No. 8.

Analysis of Responses:

The responses are tabulated according to combination of answers and in gross percentage of answers to each section.

Slow Learners in the Normal School:

Thirty-five schools (22%) make some time table provision for slow learners. This may be done by arranging a special class, by subject setting or by special remedial classes. Forty-five schools (28%) give specific instruction to class teachers to make arrangements for individual instruction. 94 schools (59%) encourage class teachers to make some provision while 45 (28%) leave it to the class teachers' discretion. This would indicate that, in a large percentage of schools, there is no specific organization to cater for slow learners but that they are dealt with in an ad hoc manner in the classroom.

17% of schools are able to allocate a special teacher for the task of coaching slow learners, 13% have Junior Teachers or Monitors who can do this task. In 26.8% of schools the head teacher takes over the task, while in 56% it is left to the discretion of the class teacher.

The number of head teachers who take on this role is interesting. In most primary schools (all except Class I) head teachers also take a class and it is possible that many of these head teachers are responding to this question as class-teachers. As a check on this, the following figures are quoted: (See figure opposite)

Since most of these head teachers are engaged in teaching their own class it is unlikely that they can spare much time for coaching slow learners in other classes. Most of these responses can be taken, therefore, as similar to responses 2 (d) and will re-inforce the previous conclusion that in most schools attention to slow learners goes on incidentally in the classroom and no specific school organization, either of time-table or staff, exists to cater for pupils at this extreme of learning capacity.

Responses to Q. 3 show more agreement than any other. 51% of schools did not answer the question, many of them expressing sharp disagreement with the practice. Only 6% made slow learners use P.E. and Sport periods for extra study time and 8% used music and/or art periods for this purpose. 27% made provision for such extra study at dinner time or after school and many pointed out that the period between end of school and departure on school buses was used for this purpose. 17% of schools gave extra coaching to slow learners at other times, specified as before school in the morning, at fixed times during the day, at spare moments during the day and during religious instruction (one school). These responses show that it is generally recognized as an undesirable practice to expect slow learners to spend extra time on work that is too hard for them.

Class organization (grouping and streaming):

79% of schools use attainment as the basis of class organization, 53% use age and 36% use ability, defined as

performance on an intelligence test. Two thirds of these schools use a combination of criteria the most popular being attainment plus age (33%).

It is difficult to reconcile some of the responses to this question with observed practices. Age promotion, as was stated by some of the responders, is Department Policy. Usually attainment is taken into account, too, especially in Grades I and II and in Grade VI so that children who are particularly slow repeat a grade. Acceleration does not take place except to a limited extent in Grade I where brighter children complete IA and IB in one year while duller children take two years. It is difficult to know how ability, or intelligence test results, may be used as a criterion for class organization in primary schools unless streaming, of the kind practised in Britain, is used. This has not been observed and teachers in general appear to be opposed to it. Yet two schools state that they use this criterion alone as the basis for their class organization. As both these schools are small primary schools and have, therefore, no more than one class in each grade, it appears that the question has been misinterpreted. In High Schools where ability streaming is simpler, 74% use intelligence test results as at least one criterion of their class organization.

Question 5 was designed to ascertain the extent to which subject setting on a class basis, is used. This is a common practice in High Schools so that a large number of responses were expected from this quarter. As it happened only 20% (31 schools in all) failed to respond. Of these

28 schools were primary and three were high schools. The others suggested that classes were organized for particular subjects, on the basis of attainment 56%, ability 48%, age 6%. Fifty-two percent use only one criterion while 23% use ability plus attainment. What is surprising in these responses is that so many primary schools (88%) say they use this method at least in one subject. One school, at least, has used the Joplin Method of organization for reading. In this method children are grouped throughout the primary school according to their reading attainment. Smaller schools with composite classes, can use such a method easily but a large number of bigger schools gave positive answers. Since this is a much greater number than has been observed the possibility of misunderstanding must be accepted again. The subjects in which setting most usually takes place are "the basic subjects", Maths, English, Science and Languages.

In 56% of schools, sections based on attainment in particular subjects are formed. Smaller numbers of schools form such sections according to other criteria. All kinds of schools appear to use this method in at least some subjects. This is what might be expected from primary schools where it is an obvious method of classroom organization. It is more surprising that High Schools break up classes which are frequently already based on ability or attainment into intra-class groups, based on the same criteria. Although this practice has some obvious immediate advantages long-term bad effects cannot be ruled out.

Gifted Children:

There has been an increased interest in the subject of "gifted children" since high school selection was discontinued. This question seeks to discover existing attitudes and practices in the education of children of exceptional ability. Most schools (67%) state that they give such children extra work, 42% let them read quietly and 36% give them extra responsibility. Many schools combine these practices in varying ways. Letting quick learners read quietly may be accepted as a negative form of treatment but it is more difficult to estimate the positive aspects of giving "extra work". This may be planned extra-curricular work or extension into higher grade work. At its best it may be what is coming to be called "enrichment work", at its worst it may be "go on to the next ten sums", or "read the next chapter when you've answered that" and so on. It would have been possible, by making the questionnaire very much more detailed, to find out more about the quality of the work being done. Instead it was considered better to keep the question general in nature and to supplement the information by personal observation. In the high schools various methods have been adopted to cater for quick learners, e.g. subject setting, streaming and enrichment procedures. In the primary school the concept of one set of work for all members of the class, to be evaluated in one test at the end of the week, is dying hard so it is significant that 10 small primary schools and two large primary schools make up the 12 schools which use

quiet reading as the only extra activity for quick learners. A few schools supplement the information with such details as: quick learners do project work, minor assignments, library work, are given free choice, work individually, are members of a special group, act as monitors. Most of these remarks come from high schools.

Individual teaching:

Various plans and techniques have been adopted in various parts of the world to cater for individual differences. Examples of these are the Dalton and Winnetka Plans which were being widely used in Australia before the war. These 3 questions were designed to discover the extent to which these techniques are being used in Tasmanian schools at the present time. Question 8 is based upon the idea of "long-term assignments" in which the work to be done is given to the pupils in advance so that they can work at it individually at their own pace. The practice is distinguished from "projects" by not necessarily being organized around a centre of interest e.g. an assignment in maths may just contain a month's work in algebra with instruction examples and exercises. The length of such assignments depends upon the age of the children concerned, "long-term" to Grade III might be one week, to senior high school students one term. The assignments are divided into three kinds on lines suggested by Mursell: uniform work for each pupil, uniform basic work leading off to optional extra work and completely individual work. The

second kind had an explanation in brackets (e.g. fast workers do extra work of a similar kind) which appears to have been misleading. It suggests extra work of the type described in the previous question where the fast worker does ten extra sums or reads an extra page rather than the wide choice of related activities it was intended to suggest.

The responses were rather unexpected. Type one assignment, which is the simplest to arrange and fits more closely into the traditional classroom organization, is given by only 20% of schools. Type three is given by 23% and type two is given by 40%. A large number of schools (34%) did not respond or gave negative answers. One school specified "not long-term assignments". Other schools specified "secondary classes only", "only Arithmetic and Spelling". I feel that many of these answers are the result of misunderstanding since the questions were read without the introductory sentence. It would appear from these responses that, at least one-third of schools, do not use assignments in their teaching process. The other two-thirds answering this question appear by the inconsistency of many of the answers not to understand the implications of the terms used. From observation it would seem that assignments are definitely used in some subjects, the most frequently mentioned being science, art and home arts but not to the extent to which this question would leave one to believe.

Projects are organized around a centre of interest, are less controlled than assignments and are frequently

initiated by the children themselves. There is, therefore, a place for both projects and assignments in the average classroom with much of the factual work being done through assignments and much of the social and skill learning being done through projects. The kind of projects suggested in the questionnaire (Q. 9) range from individual optional work to co-operative group projects and class projects in which the individual contributes to a group effort which in turn contributes to the final class product. The term "project" is often used in local schools to cover a kind of illustrated composition, frequently set in social studies and home arts, in which the emphasis is on decoration rather than research. These efforts would be classified under type a) although they would be poor examples of such. Most schools also at some time or other, in some subjects, carry out class or school projects in the production of a play or pageant, the organization of a field trip etc. Therefore it would be expected that type a) would have the highest response, followed by c) but the actual figures are remarkably close to each other:-

a) 43%

b) 40%

c) 47%

The value of the practice of giving projects lies in a) the quality of the project, b) the regularity with which they are given. It is impossible to judge the quality but the frequency may be judged from the questionnaire responses to Q. 10.

Projects are organized often - 40%, sometimes - 53% seldom - 5%, in addition 8% of schools did not respond.

This would indicate that projects are given frequently only by a minority of schools. When this is considered in relation to the subjects in which they are used it may be seen that the practice is not very common in local schools. The figures are reasonably consistent in all kinds of schools.

Conclusions

The general impression gained from the analysis of the questionnaire, and the observation which accompanied it, is not a very optimistic one. Only 20% of schools appear to be making any systematic attempt to cater for the needs of slow learners. There appears to be great confusion about grouping and other organizational methods of providing for individual differences. Many schools are making some provision for quick learners but most of this appears to be on an ad hoc basis. Assignments offer a simple method of providing, in some measure, for individualized learning. One third of the schools do not appear to be using any long-term assignments and many are using only the most routine kind. Projects are used frequently by 40% of schools but a large number of schools appear to use low-level type projects which do very little to encourage individual thought or research.

Frequent contradictions and misunderstandings which appeared are largely a function of the questionnaire, and it is certainly difficult to use a set of educational terms with the confidence that everyone will know what is meant. Onⁿ the other hand some of the contradictions appear to be the

result of confused thinking on the part of the respondents and would indicate a general lack of awareness of how schools and classrooms may be organized to allow for individuality.

This ignorance is the more remarkable in the light of the success of individual teaching methods in the thirties and the flood of literature on organizing for individual differences that followed these successful experiments.

The conclusions I have reached from this survey are in keeping with the opinions expressed by various educators in recent years. Radford might be allowed to summarize for them all:

"The proper handling of the individual differences between children still remains the most challenging problem in education." (Radford, 1961, p. 3).

In other words, while attitudes have never been more favourable towards the establishment of an education for the individual than they are now, in practice we are still a long way from the achievement of such an education.

b) Survey of Current Literature.

The purpose of this survey was to assess the frequency with which studies associated with the concept of individuality have been undertaken. This method gives a rough check of the quantity of research in a particular area and the direction which that research is taking. Abstracts of publications in 1962 were perused to assess the frequency with which studies associated with the concept of individuality has appeared.

The Journals surveyed were:

The Psychological Abstracts for 1962 which cover psychological publications in the English-speaking world;

The Education Index for 1962 which publishes abstracts from American educational journals and some British journals;

The British Educational Index (1962) which covers British journals; and

The Australian Education Index which covers all Australian journals.

There is much overlap in the figures quoted, both from one index to another and within different categories in the same index. This means that it is not possible to quote overall totals of publications. Totals under each heading merely indicate the number of titles listed under that heading.

The headings were selected from the abstracts as being terms employed in the study to indicate some aspect of individual differences. They include: Individuality, Individualism, Individual Differences, Individual Instruction, Evaluation, Educational Measurement, Testing, Objective Tests, Tests and Scales, Exceptional Children, Backwardness, Mental Retardation, Gifted Children, Handicapped Children.

Psychological Abstracts (A.P.A. 1962):

The following works were published:-

Individual differences: 14 studies ranging from differences in infant heart rate, through differences in stress at 11 plus exams, to individual differences in social activity.

Testing: 351 articles listed.

In addition two books, both containing collections of readings, are reviewed. These are:

Jenkins and Patterson (1961)

Studies in Individual Differences, the
Search for Intelligence.

Teplor, B.M. (1961)

Problems of Individual Differences
(Published in Russia).

Educational Abstracts:

In the Education Index for 1962 the following publications are listed:

Individual differences	25
Individual instruction	23
Individual differences (elementary school)	4
Individualism	6
Individuality	13
Individual differences (high school)	3
Evaluation	15
Educational measurement	8
Objective tests	6
Tests and scales	200
Mental retardation	289
Gifted children	60

Many of these studies are duplicated, e.g. Individual differences (high school) also appear under Individual differences. The individual totals are of value, for example,

in indicating the concentration of studies in the fields of testing and mental retardation.

The Australian Education Index (1962) contains:

Individual Differences	6
Individual Instruction	2
Testing	25
Exceptional Children	45

The very large number dealing with exceptional children should be noted.

The British Educational Index (1962) has the following relevant listings:-

Ability	12
Backwardness	23
Gifted children	60
Handicapped children	16
Streaming	3
Sub-normal children	21
Tests	28

The different emphasis made in Britain and Australia on the one hand and the U.S.A. on the other seems significant. Studies on techniques of testing, although common, are not as frequent in Britain and Australia as in the U.S.A. while, comparatively, studies on exceptional children loom larger.

The survey indicates the volume of studies which are appearing in the topic of individuality. It also shows how these tend to be concentrated in the fields of testing

and exceptional children to the neglect of the individual needs of the average child.

CHAPTER XI

GENERAL CONCLUSION

The ancient Greeks were the first to recognize the value of individuality. They made man 'the measure of all things' but, in the face of increasing individualism, they were incapable of adapting their social institutions. They were unable to reconcile the claims of the individual to the claims of society. Christianity seemed, at first, to offer an answer to the dilemma by giving everyone, rich or poor, slave or master, an equally important soul while, at the same time, subordinating the mortal individual to an institution. It was not long, however, before the brief freedom of the individual within this framework was over and, by the early Middle Ages, men had become, once more, just the working parts in the great institutional machine. They thought their group thoughts, looked at the world with their group prejudices and were incapable of breaking out of the social mould. External circumstances, rather than creative thinking, gave the individual his next opportunity and, during the Renaissance, we see, for a while, society directed towards the education of individuals.

Succeeding generations played with the idea of individuality without coming nearer to a solution of the basic problem "Is individuality consistent with education?"

If, in other words, education is part of the process of socialization in which raw nature is fitted to society, then is it not inevitable that complete education results in complete socialization and, therefore, complete loss of individuality? While education was restricted to a small proportion of the population, while classes remained small and teaching was still personal, the question was largely academic. Freedom of the individual was a basic tenet of Western Society and was particularly tied up with the Protestant Ethic. In general until quite recently, the future of the individual did not seem in doubt.

Twentieth Century Crisis

Now we are not so sure. The general adoption of the concept of "education for all" brought the problem into focus. Mass education with its large classes, its examinations, its standardized expectancies, its prescribed curricula seems to many to be expressly designed to turn out standard products. Mass education and mass production appear to have much in common. In the first two decades of this century the danger was clearly recognized but educators were hopeful of an early solution. The Montessori Method, the Dalton and Winnetka Plans seemed, at first to offer exciting prospects for education but, in the nineteen thirties there was some disillusionment.

Depression, war and population growth following, one after another, helped to keep the situation this way. In many ways we are no further forward to the overall solution of this problem in the sixties than we were in the twenties.

There are other reasons why the problem of the individual in education is especially urgent today. Social changes, the decline of the Protestant Ethic and its replacement by the "Freudian Ethic" or the "adjustment motif", the increase of the welfare state, the growing power of corporations, advertising and mass media of communication, the need for conformity - all these, it has been contended, are placing the very existence of the individual in jeopardy. Muller, writing on the "Prospects of the Individual" speaks of the "massive threats" to individuality in the American society which, he feels "may look more ominous because they are in some significant respects, historically unprecedented and nevertheless are not clearly perceived by most Americans who still take it for granted that they are all for the individual". (Muller, 1964, p. 325). Others have expressed, in various forms, their concern about the future of the individual. Of these Huxley, Orwell, Riesman, Whyte and LaPiere are perhaps the best known. Most recent is Gardner Murphy whose remarkable book, "Human Potentialities" is both a blueprint for the future of

mankind and a warning of the need for action. Murphy suggests that man's capacity for development, for the realization of his potentialities, is unlimited but that such realization depends upon the study of "the directions in which human needs may be guided, with equal attention to the learning powers of the individual and the feasible directions of cultural evolution". (Murphy, 1960, p. 329). He feels that individuality is a most precious human commodity and that humanity's progress towards a higher form depends upon the success of individuality. That is, it depends upon the degree to which individuals are capable of breaking the social mould, of progressing beyond the limits of their own upbringing. Society must build into itself the means of transcending its own limitations. Socialization necessarily brings with it a degree of rigidity but, if this is too great, the possibility of progress ceases. Creativeness is the means by which this rigidity is overcome and creativeness is an individual activity. Education must, therefore, foster creative individuality and the degree to which it can, successfully, replace formal rigid mass-teaching with flexible, creative and individual activities will determine man's chances of realizing these potentialities.

Early attempts to individualize education emphasized the need to cater for individual differences, to adjust the content or the method of education to the

needs of the individual. Gardner Murphy, in stating that future human development depends largely upon the freeing of the individual, has emphasised strongly the current view of individuality. This view is of individuality as a valuable resource which should be used positively by education. It is not enough to recognize that individuals are different; it is not enough to provide different educational routes which can be taken by children of differing abilities. It is time that a real attempt was made to implement the oft repeated aim of allowing each child to develop to the limit of his capacities.

Since the need for individualized instruction was first recognized, new educational tools have become available which make such instruction feasible. New knowledge of the learning process in children has been gained within the last decade from such research as that of Piaget, Skinner and Bruner.

Coupled with this are more precise and comprehensive methods of assessment and evaluation which enable the teacher to apply his knowledge of child development in general to particular children. Finally, to enable the teacher to provide an individual education efficiently, there is available an extensive range of self-help material.

The kind of education that is called for to meet the needs of the individual today may be briefly

sketched out. First of all the teacher must be skilled in child study. From the moment the child enters school the teacher must be assessing his present capabilities and his future potentialities. A thorough intellectual assessment must be given soon after he begins school and this must be checked at regular intervals thereafter. Readiness tests must be applied intelligently to determine what is the earliest possible date that he can begin to learn a new skill. Regular attainment testing will plot the development of his academic skills and diagnostic testing will indicate the reasons for failure. Careful observation will help the teacher to understand the child and to anticipate areas of difficulty. Comprehensive records will provide the data on which scholastic decisions will be made.

On the basis of the information gathered about the child, individual programmes will be mapped out. Three types of work need to go on in schools; one type is concerned with the common essentials, another is made up of individual experiences and the third of group experiences. The three types will overlap but, generally speaking, they call for three different approaches. All children will need to proceed through curriculum experiences which are common to the culture in which they live. Individual differences in learning ability insist

that each child proceeds through these experiences at an individual rate, and it is this type of experience which is best organized in the form of programmed learning and multilevel laboratories. In addition there will be experiences which the child's own needs and talents will dictate and the school must provide the opportunity for these activities to take place; in fact it is in this way that creativity can be fostered. These experiences will include art, creative writing and research work. A final grouping of experiences will be those which are best done in the group situation; drama, certain music activities and certain physical education activities suggest themselves immediately but certain aspects of all subjects are most efficiently learned as a member of a dynamic group.

The use of new materials and new techniques, imaginatively applied, will allow each child to proceed at the rate and in the direction to which his individual abilities lead him while, at the same time, he cooperates with his fellows in worthwhile experiences and prepares himself to become a member of society.

Perhaps, to those who like their education cut and dried, a matter of text-books and examinations, this portrait of the education of the future seems unduly idealistic. Perhaps, to those who prefer their teaching to be completely individualistic, a matter of inspiration,

it may appear over-organized. I do not feel that we can, in the middle of the twentieth century, afford the luxury of either of these points of view. Education can neither be reduced to a formula nor left to the gifted individual. It must become the business of professionals.

Where can such a professional approach be seen? Today it can be seen in any good school for handicapped children. Gardner Murphy says:

"Take, for example, as a contrast with the stereotyped school (described by him previously as existing everywhere) what is already done, through careful planning, for handicapped children. The deaf or the polio-stricken child, for example, gets, as a result of specialized planning, a wide variety of incentives and assistance, gratifications and challenges, which offer a strange contrast to the rather passive and mechanized routines demanded for ordinary normal children. There is real virtuosity today in work for the deaf, and in many aspects of work for the blind. We carry out, in other words, brilliant repair work on the damaged members of our community against a rather sleazy backdrop of general fumbling with the creative potentials of our normal children. A polio-stricken child can be led on to make the maximum use of his physical equipment, but the intellectual, social, esthetic, and moral

equipment of the normal child is to a very large degree cast into a lock-step form, routines explicitly taking the place of originality, and formal achievement levels taking the place of the unstructured and imaginative components of growth". (Murphy, 1957, p. 173)

These statements may be borne out by experience in many schools for children, handicapped physically and mentally. Here, to the tremendous problems of the individual child, caused by multiple handicaps of both physical and psychological nature, is directed the attention of a team of experts. Doctors and psychologists, physiotherapists, speech therapists and occupational therapists, social workers and teachers all combine their individual skills and intuitions into forming a clear picture of the child and his needs. At all stages there is planning, assessment and feed-back: Planning of therapy and education; assessment of potentialities and outcomes; feed-back to parents and other team-members. The result is that children who, a generation ago were custodial cases, relegated to a back bedroom or an institution, are now individuals with a place in the sun.

The inference for education is there for all to see as Montessori saw it sixty years ago at the conclusion of her successful teaching experience on mentally retarded children:

"The abyss between the inferior mentality of the idiot and that of the normal brain can never be bridged if the normal child has reached its full development." (Montessori, 1912, p. 38). In other words, give normal children the opportunities offered to handicapped children and let them, too, reach full development.

It is an education of this kind which is demanded for every child. Obviously the normal child does not need the services of so many experts from so many different fields but he needs, and deserves, the professional services of experts in education.

Within an education of this type, I feel we can produce the kind of creative individual which Gardner Murphy has described and we can help to solve the dilemma of individuality by educating the individual so as to secure the full development of personality while, at the same time, preserving the stability of institutional life and assisting in man's evolution to a higher state.

APPENDICES

Appendix A

Copy of questionnaire sent to schools in Tasmania during 1962

Appendix B

General analysis of questionnaire

Appendix C

Detailed analysis of questionnaire

Table 1 All schools

Table 2 All schools (percentage analysis)

Table 3 All primary schools

Table 4 All primary schools (percentage analysis)

Table 5 All secondary schools

Table 6 All secondary schools (percentage analysis)

Table 7 High schools

Table 8 Area schools

Table 9 State Primary schools

Table 10 Larger State Primary schools

Table 11 Smaller State Primary schools

Table 12 Private Primary schools

Appendix D

Chronology in the History of the Concept of Individual Differences

Appendix A

Copy of Questionnaire Sent to Schools in Tasmania during 1962

Please ring (a) the answers which most nearly
apply to the procedure adopted in your school.
If none of these answers apply leave blank.

1. Do you
 - a. allow in the time-table for time for individual instruction for slow learners a.
 - b. encourage class teachers to coach slow learners b.
 - c. leave such coaching to the discretion of the class teachers? c.
2. Do you
 - a. appoint a teacher to give extra coaching to slow learners a.
 - b. appoint a J.T.A. to give extra coaching to slow learners b.
 - c. give extra coaching yourself c.
 - d. leave such coaching to the discretion of the class teacher
3. Do you allow slow learners to have extra study time
 - a. during Physical Education or sport a.
 - b. during music or art b.
 - c. at dinner time or after school c.
4. Do you organize your classes according to
 - a. ability (the results of an intelligence test) a.
 - b. attainment (result of examinations or standardized tests. b.

4. c. age c.
d. a combination of 2 or more of these d.
(which combination e.g. a + b)

5. Do you organize any particular subjects on a different class arrangement according to

- a. ability a.
b. attainment b.
c. age c.

(please write subject(s) here)
.....)
combination here)

6. Do you make special provision for quick learners by

- a. giving them extra work a.
b. giving them extra responsibility b.
c. letting them read c.
d. any other way d.

(if d. please say how)

7. Do you form, or encourage your teachers to form sections or sets within your classes

- a. on the basis of ability a.
b. on the basis of general attainment b.
c. on the basis of attainment in particular subjects c.
d. on the basis of attainment in one subject only d.

8. Do you or your teachers set long term assignments or contracts in which

- a. each pupil completes the same work but at his own pace a.
- b. when pupils have finished their basic work they do related optional activities b.
- c. the work is adjusted to the pupils own ability or attainment c.

9. Do you or your teachers organize projects in which

- a. individual pupils complete optional work a.
- b. pupils co-operate to complete a group task b.
- c. pupils work in groups towards the completion of a class display etc. c.

10. Are such projects organized

- a. often a.
- b. sometimes b.
- c. seldom c.
- d. never? d.

Appendix B

Survey of teaching methods to cater for individual differences carried out on Tasmanian schools during 1962.

(No. of schools replying 159 = 65%)

Analysis of responses in percentages.

Slow learners (Q 1, 2, and 3)

Q. 1. Schools....

- | | |
|---|-----|
| (a) making time-table provision for slow learners... | 22% |
| (b) instructing class teachers to make provision for slow learners... | 28% |
| (c) encouraging class teachers to make such provision... | 59% |
| (d) leaving it to class teachers' discretion... | 23% |

Q. 2. Schools....

- | | |
|---|-----|
| (a) appointing a teacher to coach slow learners... | 17% |
| (b) appointing a J.T.A. to coach slow learners... | 12% |
| (c) where head teacher gives extra coaching... | 26% |
| (d) leaving coaching to class teachers' discretion... | 56% |

Q. 3. Schools allowing slow learners to have extra study time:-

- | | |
|---------------------------------------|-----|
| (a) during P.E. and Sport... | 6% |
| (b) during Music and/or Art... | 8% |
| (c) at dinner-time or after school... | 27% |
| (d) at other times... | 17% |
| not answering this question... | 51% |

Class organization (Q 4, 5 and 7)

Q. 4. Schools organizing classes on basis of

- | | |
|--|-----|
| (a) ability... | 36% |
| (b) attainment... | 79% |
| (c) age... | 53% |
| schools using only one criterion... | 34% |
| schools using more than one criterion most popular combination = attainment plus age | 66% |
| | 33% |

Q. 5. Schools organizing subjects according to different criteria:

- | | |
|---|-----|
| (a) ability... | 48% |
| (b) attainment... | 56% |
| (c) age... | 6% |
| schools using only one criterion... | 52% |
| schools using more than one criterion... | 28% |
| schools not responding... | 20% |
| most popular combination, (ability and attainment)... | 23% |

Q. 7. Schools in which teachers form sections based on

- | | |
|--|-----|
| (a) ability... | 12% |
| (b) general attainment... | 15% |
| (c) attainment in particular subjects... | 56% |
| (d) attainment in one subject... | 6% |
| schools not answering this question | 17% |

Quick learners (Q. 6)

Q. 6. Schools making special provision for quick learners by

- | | |
|---|-----|
| (a) giving extra work... | 67% |
| (b) giving extra responsibility... | 36% |
| (c) letting them read quietly... | 42% |
| (d) some other way... | 15% |
| giving them extra work and responsibility... | 13% |
| giving them extra work and letting them read quietly... | 14% |
| giving them extra work, responsibility and letting them read quietly... | 11% |

Individual Instruction (Q. 8, 9 & 10)

Q. 8. Schools in which long-term assignments are set where

- | | |
|---|-----|
| (a) pupils complete the same work at own pace... | 20% |
| (b) pupils do related optional activities... | 40% |
| (c) work is adjusted to pupils own ability... | 23% |
| schools not answering this question... | 34% |
| schools using more than one kind of assignment... | 13% |

N.B. 8b) suspect because of possible misinterpretation of explanation in brackets...
(e.g. fast workers do extra work of a similar kind)

Q. 9. Schools organizing projects where...

- | | |
|---|-----|
| (a) individual pupils complete optional work... | 43% |
| (b) pupils co-operate in a group test... | 40% |
| (c) pupils work in groups in completing a class task... | 47% |
| schools using more than one kind of project... | 33% |
| schools not answering this question... | 9% |

Q. 10. Schools organizing projects

- | | |
|--|-----|
| (a) often... | 40% |
| (b) sometimes... | 53% |
| (c) seldom... | 5% |
| (d) never | 0% |
| schools not answering this question... | 8% |

Appendix C

Detailed Analysis of Questionnaire Tables 1 - 12

TABLE NO. 1

AIL SCHOOLS. $n = 23 + 26 + 12 + 98 = 159.$

Q	a	b	c	d	a +b	a +c	a +d	b +c	b +d	c +d	ab +c	ab +d	bc +d	ac +d	ab cd		n.a	T	
1	19	19	55	19	1	4	2	10	2	11	3	0	5	1	5		3	159	
2	23	12	24	71	1	2	1	3	4	13	0	0	0	0	0		5	159	
3	3	8	34	23	1	2	0	1	0	2	2	0	0	1	1		81	159	
4	5	34	15	-	35	12	-	52	-	-	5	-	-	-	-		1	159	
5	36	46	1	5	37	2	-	5	-	-	1	-	-	-	-		31	159	
6	42	9	12	14	20	22	4	9	0	2	18	0	0	3	1		3	159	
7	13	18	85	9	3	1	0	1	0	0	2	0	0	0	0		27	159	
8	14	45	25	-	10	3	-	3	-	-	5	-	-	-	-		54	159	
9	29	24	40	-	7	12	-	13	-	-	20	-	-	-	-		14	159	
10	56	78	5	0	6	1	0	0	0	0	1	0	0	0	0		12	159	

Answers to questionnaire received from 159 schools arranged according to frequency of response to each category and combination of categories.

TABLE NO. 2

All Schools n = 159

Q	a	%	b	%	c	%	d	%	n.a	%								
1	35	22.0	45	28.0	94	59.0	55	28.0	3	2.0								
2	27	17.0	20	12.5	42	26.4	89	56.0	5	3.0								
3	10	6.0	13	8.0	43	27.0	27	17.0	81	51.0								
4	57	35.7	126	79.2	84	52.8	-	-	1	0.5								
5	76	47.8	89	56.0	9	45.6	-	-	31	19.5								
6	107	67.4	57	35.7	67	42.0	24	15.0	3	2.0								
7	19	12.0	24	15.0	89	56.0	9	5.6	27	17.0								
8	32	20.0	63	39.6	36	22.6	-	-	54	34.0								
9	68	42.7	64	40.0	85	47.4	-	-	14	8.7								
10	64	40.0	85	53.0	7	4.4	0	0	12	7.5								

Answers to questionnaire received from 159 schools arranged according to frequency of response to each category and percentage of these responses of the

TABLE NO. 3

ALL PRIMARY SCHOOLS.

$$n = 98 + 12 + 26 = 136.$$

Q	a	b	c	d	a +b	a +c	a +d	b +c	b +d	c +d	ab +c	ab +d	bc +d	ac +d	ab cd		n.e		T	
1	9	19	50	13	1	3	2	10	2	11	3	0	5	1	5		2		136	
2	8	12	24	63	1	2	1	3	4	13	0	0	0	0	0		5		136	
3	2	6	30	23	1	2	0	1	0	2	2	0	0	1	1		65		136	
4	2	33	12	-	23	10	-	51	-	-	4	-	-	-	-		1		136	
5	34	39	1	-	27	2	-	4	-	-	1	-	-	-	-		28		136	
6	34	18	12	11	20	20	3	5	0	2	18	0	0	1	2		0		136	
7	12	17	72	6	2	1	0	0	0	2	0	0	0	0	0		23		136	
8	9	44	21	-	43	-	3	-	-	2	-	-	-	-	-		50		136	
9	27	21	35	-	4	11	-	11	-	-	15	-	-	-	-		12		136	
10	49	67	3	0	5	1	0	0	0	0	1	0	0	0	0		10		136	

Answers to questionnaire received from 136 primary schools (State and Private) arranged according to frequency of response to each category and combination of categories.

TABLE NO. 4

All Primary Schools (Percentages)

Q	a	%	b	%	c	%	d	%	n.a	%								
1	24	17.6	45	33.0	88	64.6	39	28.6	2	1.4								
2	12	8.8	20	14.7	42	30.8	81	59.5	5	3.7								
3	9	6.6	11	8.1	39	28.6	27	19.8	65	47.9								
4	39	28.6	111	81.6	77	56.7	-	-	1	7								
5	64	47.2	71	52.2	8	5.9	-	-	28	20.5								
6	98	72.0	53	38.9	60	44.1	19	13.9	0	0								
7	17	12.5	22	16.2	76	55.6	6	4.4	23	16.9								
8	18	13.2	53	38.9	29	21.2	-	-	50	37.0								
9	57	41.7	51	37.6	72	52.8	-	-	12	8.8								
10	66	48.6	73	53.6	5	3.7	0	0	10	7.4								

Answers to questionnaires received from 136 Primary Schools arranged according to a) frequency of response to each category and b) percentage of these responses of total number of replies.

TABLE NO. 5

ALL SECONDARY SCHOOLS. $n = 23 + 26 = 49.$

Q	a	b	c	d	$\frac{a}{+b}$	$\frac{a}{+c}$	$\frac{a}{+d}$	$\frac{b}{+c}$	$\frac{b}{+d}$	$\frac{c}{+d}$	$\frac{a}{bc}$	$\frac{a}{bd}$	$\frac{b}{cd}$	$\frac{ac}{d}$	$\frac{ab}{cd}$		n.a	T	
1	12	4	14	6	1	2	0	2	0	4	1	0	2	0	0		1	49	
2	19	6	1	19	0	0	1	0	0	2	0	0	0	0	0		1	49	
3	1	2	9	2	0	1	0	0	0	0	0	0	0	0	0		34	49	
4	3	7	5	-	15	3	-	13	-	-	3	-	-	-	-		0	49	
5	10	13	1	-	16	0	-	2	-	-	0	-	-	-	-		7	49	
6	22	1	0	5	5	5	1	5	0	0	1	0	0	0	1		3	49	
7	5	5	26	4	2	0	0	0	0	0	0	0	0	0	0		7	49	
8	7	9	11	-	6	0	-	2	-	-	3	-	-	-	-		11	49	
9	8	9	12	-	3	3	-	4	-	-	8	-	-	-	-		2	49	
10	16	27	2	0	2	0	0	0	0	0	0	0	0	0	0		2	49	

Answers to questionnaire received from 49 Secondary Schools (State and Independent High Schools and State Area Schools) arranged according to frequency of

TABLE NO. 6

All Secondary Schools (Percentages)

Q	a	%	b	%	c	%	d	%	n.a	%								
1	16	33	10	21	25	51	12	25	1	2								
2	20	41	6	13	3	62	22	45	1	2								
3	2	4	2	4	10	21	2	4	34	69								
4	24	49	38	77	24	49	-	-	0	0								
5	28	57	21	42	3	6	-	-	7	15								
6	35	71	13	27	11	22	7	14	3	7								
7	7	14	7	14	28	57	4	9	7	15								
8	16	33	21	43	16	33	-	-	11	23								
9	22	45	24	49	27	55	-	-	2	4								
10	18	37	29	60	2	4	0	0	2	4								

Answers to questionnaire received from 49 schools arranged according to frequency of response to each category and percentage of these responses of the total number of replies.

TABLE NO. 7

HIGH SCHOOLS (STATE & PRIVATE) n = 23

Q	a	b	c	d	a +b	a +c	a +d	b +c	b +d	c +d	ab +c	ab +d	bc +d	ab cd	ac +d		n.a		T	
1	10	0	5	6	0	1	0	0	0	0	0	0	0	0	0		1		23	
2	15	0	0	8	0	0	0	0	0	0	0	0	0	0	0		0		23	
3	1	2	4	0	0	0	0	0	0	0	0	0	0	0	0		16		23	
4	3	1	3	-	12	2	-	1	-	-	1	-	-	-	-		0		23	
5	2	7	0	-	10	0	-	1	-	-	0	-	-	-	-		3		23	
6	8	1	0	3	0	2	1	4	0	0	0	0	0	1	0		3		23	
7	1	1	13	3	1	0	0	0	0	0	0	0	0	0	0		4		23	
8	5	1	4	-	6	0	-	0	-	-	3	-	-	-	-		4		23	
9	2	3	5	-	3	1	-	2	-	-	5	-	-	-	-		2		23	
10	7	11	2	0	1	0	0	0	0	0	0	0	0	0	0		2		23	

Answers to questionnaire received from 23 High Schools arranged according to frequency of response to each category and combination of categories.

TABLE NO. 8

AREA SCHOOLS. N = 26

Q	a	b	c	d	a +b	a +c	a +d	b +c	b +d	c +d	ab +c	ab +d	bc +d	ab cd	ac +d		n.a	T	
1	2	4	9	0	1	1	0	2	0	4	1	0	2	0	0		0	26	
2	4	6	1	11	0	0	1	0	0	2	0	0	0	0	0		1	26	
3	0	0	5	2	0	1	0	0	0	0	0	0	0	0	0		18	26	
4	0	6	2	-	3	1	-	12	-	-	2	-	-	-	-		0	26	
5	8	6	1	-	6	0	-	1	-	-	0	-	-	-	-		4	26	
6	14	0	0	2	5	3	0	1	0	0	1	0	0	0	0		0	26	
7	4	4	13	1	1	0	0	0	0	0	0	0	0	0	0		3	26	
8	2	8	7	-	0	0	-	2	-	-	0	-	-	-	-		7	26	
9	6	6	7	-	0	2	-	2	-	-	3	-	-	-	-		0	26	
10	9	16	0	0	1	0	0	0	0	0	0	0	0	0	0		0	26	

Answers to questionnaire received from 26 Area Schools arranged according to frequency of response to each category and combination of categories.

TABLE NO. 9

PRIMARY SCHOOLS (STATE) n = 98

Q	a	b	c	d	a+b	a+c	a+d	b+c	b+d	c+d	ab+c	ab+d	bc+d	ab+cd	ac+d		n.a		T	
1	6	15	37	11	0	2	2	8	2	5	2	0	2	4	0		2		98	
2	3	6	19	46	1	2	0	3	4	10	0	0	0	0	0		4		98	
3	2	5	22	18	1	1	0	1	-	2	2	0	0	1	1		42		98	
4	2	23	9	-	17	8	-	36	-	-	2	-	-	-	-		1		98	
5	24	33	0	-	16	2	-	3	-	-	1	-	-	-	-		19		98	
6	20	8	12	8	14	14	3	3	0	2	12	0	0	2	0		0		98	
7	7	12	56	5	1	0	0	1	0	0	1	0	0	0	0		15		98	
8	7	28	14	-	3	2	-	1	-	-	2	-	-	-	-		41		98	
9	19	14	24	-	3	8	-	9	-	-	11	-	-	-	-		10		98	
10	37	47	3	0	3	0	0	0	0	0	0	0	0	0	0		8		98	

Answers to questionnaire received from 98 State Primary Schools arranged according to frequency of response to each category and combination of categories.

TABLE NO. 10

LARGER PRIMARY SCHOOLS (CLASS Ia - III inc.)

Q	a	b	c	d	a +b	a +c	a +d	b +c	b +d	c +d	ab +c	ab +d	bc +d	ac +d	ab cd	n.a.	F
1	1	8	14	7	0	1	1	6	0	1	1	0	1	0	3	0	44
2	2	3	3	21	1	1	0	3	3	6	0	0	0	0	0	1	44
3	1	4	11	10	0	1	0	1	0	2	1	0	0	0	0	13	44
4	0	6	9	-	11	3	-	13	-	-	2	-	-	-	-	0	44
5	9	15	0	-	7	1	-	2	-	-	0	-	-	-	-	10	44
6	13	1	2	5	5	5	3	1	0	1	7	0	0	0	1	0	44
7	3	6	27	2	0	0	0	1	0	0	1	0	0	0	0	4	44
8	1	17	8	-	0	0	-	1	-	-	1	-	-	-	-	16	44
9	7	5	13	-	2	6	-	5	-	-	6	-	-	-	-	0	44
10	21	21	1	0	1	0	0	0	0	0	0	0	0	0	0	0	44

Answers to questionnaire received from 44 State
Primary Schools (Class Ia - III inclusive) arranged
in order of increasing number of children.

TABLE NO. 11

SMALLER PRIMARY SCHOOLS (CLASS IV - VI inc.)

Q	a	b	c	d	a +b	a +c	a +d	b +c	b +d	c +d	a bc	a bd	b cd	a cd	ab cd	n.a.	T
1	5	7	23	4	0	1	1	2	2	4	1	0	1	0	21	2	54
2	1	3	16	25	0	1	0	0	1	4	0	0	0	0	0	3	54
3	1	1	11	8	1	0	0	0	0	0	1	0	0	1	1	29	54
4	2	17	0	-	6	5	-	23	-	-	0	-	-	-	-	1	54
5	15	18	0	-	9	1	-	1	-	-	1	-	-	-	-	9	54
6	7	7	10	3	9	9	0	2	0	1	5	0	0	0	1	0	54
7	4	6	29	3	1	0	0	0	0	0	0	0	0	0	0	11	54
8	6	11	6	-	3	2	-	0	-	-	1	-	-	-	-	25	54
9	12	9	11	-	1	2	-	4	-	-	5	-	-	-	-	10	54
10	16	26	2	0	2	0	0	0	0	0	0	0	0	0	0	8	54

Answers to questionnaire received from 54 State
Primary Schools (Class IV - VI inclusive) arranged

TABLE NO. 12

PRIMARY SCHOOLS (PRIVATE) n = 12

Q	a	b	c	d	$\frac{a}{+b}$	$\frac{a}{+c}$	$\frac{a}{+d}$	$\frac{b}{+c}$	$\frac{b}{+d}$	$\frac{c}{+d}$	$\frac{ab}{+c}$	$\frac{ab}{+d}$	$\frac{bc}{+d}$	$\frac{ab}{cd}$	$\frac{ac}{+d}$		n.a	T	
1	1	0	4	2	0	0	0	0	0	2	0	0	1	1	1		0	12	
2	1	0	4	6	0	0	0	0	0	1	0	0	0	0	0		0	12	
3	0	1	3	3	0	0	0	0	0	0	0	0	0	0	0		0	5	
4	0	4	1	-	3	1	-	3	-	-	0	-	-	-	-		0	12	
5	2	0	0	-	5	0	-	0	-	-	0	-	-	-	-		5	12	
6	0	0	0	1	1	3	0	1	0	0	5	0	0	0	1		0	12	
7	1	1	3	0	0	1	0	0	0	0	1	0	0	0	0		5	12	
8	0	8	0	-	1	1	-	0	-	-	0	-	-	-	-		2	12	
9	2	1	4	-	1	1	-	0	-	-	1	-	-	-	-		2	12	
10	3	4	0	0	1	1	0	0	0	0	1	0	0	0	0		2	12	

Answers to questionnaire received from 12 Non-State Primary Schools arranged according to frequency of response to each category and combination of categories.

Appendix D

Chronology in the History of the Concept of Individual Differences

	BC		AD
THALES	640	BEDE	331
ANAXIMENES	611	ERIGENA	810
ANAXIMANDER	610	AVICENNA	980
HERACLITUS	540	ABELARD	1079
PARMENIDES	539	JOHN OF SALISBURY	1115
EMPEDOCLES	490	AVERROES	1126
SOCRATES	470	ALBERTUS MAGNUS	1193
HIPPOCRATES	460	ROGER BACON	1214
PLATO	427	THOMAS AQUINAS	1225
ARISTOTLE	384	DANTE	1265
EPICURUS	342	DUNS SCOTUS	1266
ZENO	322	OCKHAM	1270
LUCRETIVS	95	BURIDAN	1295
	AD	PETRARCH	1303
ST. PAUL	30	BOCCACCIO	1313
QUINTILIAN	35	VERGERIVS	1349
BEN GAMELA	64	GERSON	1363
GALEN	130	DA FELTRE	1378
ST. CLEMENT	160	ALBERTI	1404
ORIGEN	184	VALLA	1405
JEROME	331	VEGIUS	1406
AUGUSTINE	353	DA VINCI	1452

ERASMUS	1466	ROUSSEAU	1712
SADOLETO	1477	KANT	1724
LUTHER	1483	LAVATER	1741
ELYOT	1490	PESTALOZZI	1746
LOYOLA	1491	CABANIS	1757
VIVES	1492	LAMARCK	1744
RABELAIS	1495	GALL	1758
ASCHAM	1515	HEGEL	1770
HUARTE	1530	JAMES MILL	1773
MULCASTER	1531	HERBART	1776
MONTAIGNE	1533	FROEBEL	1782
FRANCIS BACON	1560	COMTE	1798
WOOTON	1568	FECHNER	1801
HOBBS	1588	ROSENKRANZ	1805
COMENIUS	1592	J.S. MILL	1806
DESCARTES	1596	BAIN	1818
MILTON	1608	SPENCER	1820
HOOLE	1618	GALTON	1822
PASCAL	1623	JAMES	1842
LOCKE	1632	FREUD	1856
MALEBRANCHE	1638	BINET	1857
LEIBNIZ	1646	STERN	1859
BERKELEY	1685	DEWEY	1859
HARTLEY	1705	MONTESSORI	1870
HUME	1711		

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